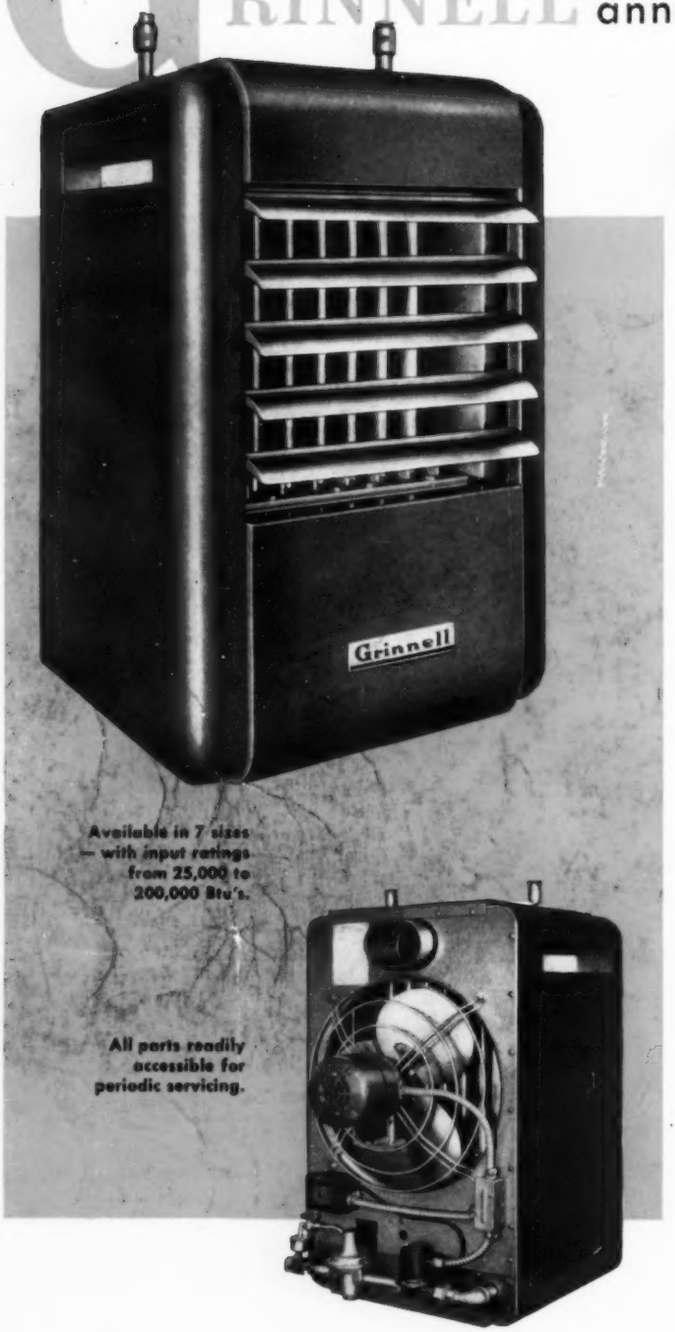
ARCHITECTURAL RECORD

207

FEBRUARY 1954

GRINNELL announces its new line of

GAS-FIRED UNIT HEATERS


Grinnell
Available in 7 sizes — with input ratings from 25,000 to 200,000 Btu's.
All parts readily accessible for periodic servicing.

AUTOMATIC! EFFICIENT! ASSURE YEARS OF DEPENDABLE SERVICE

Grinnell gas-fired unit heaters are easy to install, simple to operate and maintain. Efficient performance assured — with any type of gas — by modern design of burners and heat exchanger, proper motor and fan unit.

Automatic safety pilot operates to shut off main gas supply if pilot burner goes out. Flashback and extinction noise prevented by the burners' raised port design and proper port size for the gas used. Low speed motors have built-in thermal overload protection and automatic reset.

Additional features of Grinnell *gas-fired* unit heaters . . .

- Casing die-formed of heavy steel, with baked-on enamel finish
- Heat exchanger tubes and draft diverter of aluminized steel
- Combustion chamber of heavy steel, welded
- Burners of close-grained iron castings
- Adjustable louvers
- Burners and control assembly removable as a unit
- Hinged bottom pan permits cleaning interior of tubes
- Threaded pipe hangers for easy suspension
- Only wiring required is connection to room thermostat or manual switch
- Approved by the American Gas Association

WRITE FOR CATALOG

GRINNELL
UNIT HEATERS FOR STEAM, HOT WATER, GAS

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

Manufacturer of: pipe fittings • welding fittings • forged steel flanges • steel nipples • engineered pipe hangers and supports Thermolier unit heaters • Grinnell-Saunders diaphragm valves • prefabricated piping • Grinnell automatic fire protection systems

ARCHITECTURAL RECORD (Vol. 115, No. 2, February, 1954) is published monthly by F. W. Dodge Corp., 10 Ferry Street, Concord, N. H., with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. $5.50 per year; Foreign, $20.00.
(Regular Edition)

Entered as second-class matter at the Post Office, Concord, N. H., March 16, 1946, under the Act of March 3, 1879.

ARCHITECTURAL RECORD

February 1954 Vol. 115 No. 2

Copyright 1954 by F. W. Dodge Corporation, with all rights reserved.

ARCHITECTURAL RECORD (combined with AMERICAN ARCHITECT and ARCHITECTURE) is published monthly by F. W. Dodge Corporation, 10 Ferry Street, Concord, New Hampshire, with editorial and executive offices at 119 West 40th Street, New York 18, New York. Western editorial office, 2877 Shasta Road, Berkeley 8, California.

STAFF OF ARCHITECTURAL RECORD

F.W. DODGE CORPORATION

H. Judd Payne, *Publishing Director*; **Robert F. Marshall**, *General Manager*; **Marshall T. Ginn**, *Circulation Manager*. . . . **Joseph B. Mason**, *Executive Editor*; **Emerson Goble**, *Managing Editor*; **James S. Hornbeck, A.I.A.**, **Frank G. Lopez, A.I.A.**, *Senior Associate Editors*; **Elisabeth Kendall Thompson**, *Associate Editor and Western Section Editor (Berkeley, California Office)*; **Robert E. Fischer** (*Engineering*), **Florence A. van Wyck**, **Herbert L. Smith, Jr., A.I.A.**, **Jeanne M. Davern** (*News*): *Associate Editors*; **Ernest Mickel**, **Dan Street** (*Washington*), **John Caulfield Smith, M.R.A.I.C.** (*Canada*): *Contributing Editors*; **Marjorie Blake**, **Grace M. Anderson**: *Editorial Assistants*; **Peter Piening**, *Consulting Design Director*; **Eugene H. Hawley**, **Alfred Petersen**, *Design*; **Sigman-Ward**, *Drafting Consultants*; **Thomas S. Holden**, *Industry Relations Consultant*; **Clyde Shute**, *Statistical Consultant*; **Clifford Dunnells, Jr.**, *Field Research Consultant*; **Samuel C. Pace**, *Public Relations Consultant*.

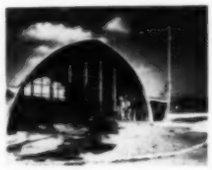
TABLE OF CONTENTS

The Record Reports

Perspectives	9
Opinion	24
News from Canada. *By John Caulfield Smith*	26
News from Washington. *By Ernest Mickel*	38
Construction Cost Index	42
Required Reading	46
Current Trends in Construction	358

Building Types Study Number 207 — Schools 149

Often more interesting than the schools themselves is the thought processes of the architects who created them, especially if those architects have great school experience behind them. Here four such dissect their own schools, comparing one with another, to trace the development of their best designs.



Bar Harbor, Me., Elementary School; Alonzo J. Harriman, Inc., Architects-Engineers. Photograph by Joseph W. Molitor

Introduction. *By Frank G. Lopez* 149

A Comparative Analysis of Three Maine Schools. *By Alonzo J. Harriman:* Skowhegan, Me., Elementary School; Bar Harbor, Me., Elementary School; Washington St. School, Brewer, Me.; Alonzo J. Harriman, Inc., Architects-Engineers 150

Orientation Affects Cost and Design: Roosevelt School and Wilson School, Miami, Okla.; Caudill, Rowlett, Scott & Associates, Architects 165

Growth of an Indoor-Outdoor Unit: John Muir Elementary School, Martinez, Calif.; John Lyon Reid, Architect 172

Three Schools in One District: Dix St. Elementary School, Maple St. Elementary School, and Hudson Falls School No. 2, Hudson Falls, N. Y.; Henry L. Blatner, Architect 179

Architectural Interiors

Contribution of design to improved mental health has frequently been pointed out, at least with respect to mental hospitals. But how about the nurses who work in those places; maybe they, too, could use pleasant surroundings, at least after working hours. Here good design not only pleases the nurses, in this case students, but also induces them to go there in the first place. Central Oklahoma State Hospital, Norman, Okla.; Conner & Pojezny, Architects 181

Continued on next page

ARCHITECTURAL RECORD

Continued from page 5

But Don't Forget Imagination

Last month Giedion advised us to forget that "epithet" known as "the international style." This month he advises not to forget the imagination that was part of the credo of the originators of that "style." With especial reference to the exciting new solutions to an age-old poser, the vaulting problem. And with a slight nod toward the construction of primitive peoples, which, people keep telling us, have interesting parallels with modern architecture.

The State of Contemporary Architecture. 2. The Need For Imagination. *By Sigfried Giedion* 186

Two Houses

Only two houses this month — we seem to have been running seven recently — but two houses worthy of a close look, by two architects whose work has often been studied before, and no doubt will continue to be.

The Frederic Wieting House, Swampscott, Mass.: Carl Koch & Associates, Architects 192

The Sigmund Kunstadter House, Highland Park, Ill., George Fred Keck & William Keck, Architects 197

Hospital With A New Look

Rino Levi and his confreres are well recognized as stormy petrels in architectural esthetics. Here they have come up with a group of three buildings in a cancer hospital, each asserting itself in its own vocabulary. Don't miss the two strip windows per floor in the main building.

Instituto Central Do Cancer, Sao Paulo, Brazil: Rino Levi & Roberto Cerqueira Cesar, Architects 203

Architectural Engineering

Basic Elements in the Planning of Electrical Systems: Part 1. *By Felix B. Graham.*

Some of the basic concepts of electrical design common to all types of buildings, with emphasis on quality and quantity standards of illumination. 206

School Heating Combined with Structure for Low Cost, Comfort. By Fred S. Dubin, Consulting Engineers

Warm air system uses underfloor space as well as wardrobes in heating design. 212

Product Reports 215

Office Literature 216

Time Saver Standards 219

Index to Advertising 360

OFFICERS OF THE F. W. DODGE CORPORATION

James McV. Breed, *Chairman of the Board*; **Paul Abbott and Thomas S. Holden:** *Vice Chairmen of the Board*; **Howard Barringer,** *President*; **Irving W. Hadsell, Chauncey L. Williams:** *Executive Vice Presidents*; **Howard M. Thompson,** *Vice President and Tresaurer*; **Julius T. Little, Robert F. Marshall, T. Oliver Morgan, H. Judd Payne:** *Vice Presidents*; **Carl S. Bennett, Ralph M. Hairston, O. O. Paulsell, Richard H. Ray:** *Regional Vice Presidents*; **Edwin H. Freed,** *Assistant Vice President and Comptroller*; **Walter F. DeSaix, Clifford C. Dunnells, Jr., Clyde Shute, Marc Wayne:** *Assistant Vice Presidents*; **Sanford D. Stockton, Jr.,** *Secretary*; **William C. Breed, Jr., George W. Morgan, Jr.:** *Assistant Secretaries*; **Irving B. Satin,** *Assistant Treasurer.*

OTHER F. W. DODGE SERVICES:

Dodge Reports and Dodge Statistical Research Service — Sweet's Files — "Planning Kit for Our New Home" — Chicago Construction News — Daily Pacific Builder — Denver Daily Journal — Real Estate Record & Builders' Guide.

Member of Audit Bureau of Circulations and Associated Business Publications. Architectural Record is indexed in Readers' Guide to Periodical Literature, Art Index, Industrial Arts Index and Engineering Index.

Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

Subscription rates in U. S., U. S. Possessions, and Canada: $5.50 for one year, $9.00 for two years, $11.00 for three years. Elsewhere, subscriptions from those who by title are architects or engineers, $6.50 for one year, $11.50 for two years, $15.00 for three years; subscriptions from all others outside U. S., U. S. Possessions and Canada, $20.00 a year. Single copy price, $2.00. Circulation Manager: Marshall T. Ginn.

THE RECORD REPORTS

PERSPECTIVES

ARCHITECTURAL EDUCATION IN AMERICA: *This is how it looked to Shlomo Sha'ag, the Israeli architect who visited 23 American architectural schools last summer as part of a year's tour of "leading architectural schools of the world" in preparation for organizing and directing the new architectural faculty at Technion, Israel Institute of Technology in Haifa. Professor Sha'ag, a practicing architect and a former president of the Israel Association of Architects, came to the United States — his first visit here — from a tour of England and then went on to France, Italy and Germany. The following report has been adapted by Professor Sha'ag from a talk he made in New York at the end of his American tour.*

TO UNDERSTAND the system of architectural education in the States, one must know how architects are registered there. Not until three years after graduation may an architect who wants to practice on his own take the state examinations. In England, which I visited before coming to the States, I found something different. The Royal Institute of British Architects has been granted the sole right in the British Empire to examine applicants and decide whether or not they will be permitted to practice architecture. Those who pass the examination become members of the R.I.B.A. The R.I.B.A. acts for the State. To make things easier the Institute has bestowed licensing rights upon many schools of architecture after working out a uniform practice of examinations. Therefore, what I found in England was that all schools of architecture are nearly the same because all of them must meet the requirements of the Royal Institute of British Architects. I found that it was enough to visit one or two schools to learn all about architectural education in England.

AFTER SEEING two or three schools in the States, however, I found that the first important fact about architectural education in the States is that it differs so much from that in England. The fact that the school has nothing to do with granting that "white paper" which you hang on your wall and which says that you have the right to practice architecture is an important factor that has raised architectural education in the States to a higher standard, in many cases, than in England. The fact that in the States you do not have to teach according to a certain national plan creates a wide variety of methods of teaching. It was an exciting experience to travel from school to school and find so many interesting and different ideas about what to teach and how to teach it. To illustrate, I shall discuss some of the schools I visited.

I SHALL BEGIN with Carnegie Institute of Technology in Pittsburgh. There I discovered a wonderful system. It was absolutely new, to me at any rate, and to many architects and educators in Europe, and even to many in the States, as I learned later. The student performing a work of design consults with at least four teachers: one on design, one on structure, one on construction and one on "representation" and all that goes with it, i.e., descriptive geometry, drawing, painting and speech. Even doing a tiny project of a one-room house, he must consult with these four teachers.

It was a surprise to me because I had known of no other system than doing, for instance, an exercise in building construction for my professor in construction, a problem in statics for another teacher and so on. Most of the drawings I did were abstract exercises, not connected with one another. But in the States, from the very first steps, a one-room house problem begins to live and ceases to be mere theory. Teams of teachers instruct students to be members of future teams after their graduation. This teamwork of teachers embodies within itself assurance of success — they have to meet to discuss future exercises, previous failures and so on.

I learned even more at Carnegie Tech. One of their techniques is having last-year students teach freshmen. To appreciate that fully one must watch it in operation.

THEN I CAME to the Massachusetts Institute of Technology, where I again found something new. I found that they teach the history of architecture only in the fourth and fifth years. Why? First, in order not to influence the new student, who generally tends to copy mechanically. Second, when he is more mature, he understands better and, therefore, if he does copy, he does not do so mechanically. Third, after the student has struggled for two to three years with design problems and all that goes with them, he has accumulated a wider knowledge of basic problems of architecture, and therefore he is better prepared to accept with open eyes information about the past.

Later I found the same situation in the University of Washington in Seattle and the University of California in Berkeley. In Harvard I found an extreme — history of architecture is only an elective subject.

IN PHILADELPHIA I visited the University of Pennsylvania. There I

(Continued on page 318)

BUILDING NEEDS GET ATTENTION IN PRESIDENT

BY ERNEST MICKEL

THE 7000-WORD ADDRESS in which President Dwight D. Eisenhower last month fulfilled his Constitutional duty "from time to time [to] give to the Congress information of the State of the Union" had been awaited with more than usual interest — both as the charter of the "dynamic and progressive program" the President has said the Republicans must offer the country if they are to "deserve" to remain in power and as the Administration's first opportunity to present a fully-studied report on its developing policies. Although details of program and budget were for the most part left to subsequent messages to be submitted to the Congress later in the month, the State of the Union message provided a basic index to Administration thinking on a broad range of subjects, including several in which architects and engineers have an obvious special interest.

A new approach to the school facilities crisis which depression and war have for two decades made perennial was forecast in the President's proposal for a series of state conferences on school needs, culminating later in a national conference which would reassess the requirements for school buildings and teachers.

At the same time President Eisenhower reemphasized the traditional American policy of public education — a state and local responsibility. He added, however, that the Federal government should stand ready to assist states which "demonstrably cannot provide sufficient school buildings."

The President said he hoped the state conferences would be held during 1954. From these, and the national meeting, he added, should come new information with which every level of government can "attack this serious problem."

In another area of chronic shortage of facilities, the President urged that the Hospital Survey and Construction (Hill-Burton) Act be broadened to assist in development of adequate facilities for the chronically ill and to encourage construction of diagnostic centers, rehabilitation facilities and nursing homes.

The President's proposals on housing included these recommendations (following closely those of his Committee on Housing Policies and Programs, which reported its findings in December):

1. Modernization of the home mortgage insurance program of the Federal government.

2. Redirection of the present system of loans and grants-in-aid to cities for slum clearance and redevelopment.

3. Extension of the advantages of insured lending to private credit engaged in this task of rehabilitating obsolete neighborhoods.

SCHOOL SHORTAGE NOW ESTIMATED AT $5 BILLION; PEAK NEED SEEN IN 1965; SECONDARY PINCH WORSE

SCHOOL CONSTRUCTION in this country has far from caught up with needs. The National Education Association, reporting on its annual survey of teacher and school building needs, said the building situation for the country as a whole improved slightly during 1952–53 as to rural elementary school buildings, but the same study produced figures showing a loss in the battle against classroom shortages in urban school systems.

The secondary school shortage in particular now has reached substantial proportions. In 1952–53 just 28 states estimated their secondary school building shortage was serious; in 1953–54, 41 so report. The N.E.A. deduced from its findings that the housing of present enrollments — reaching more than 29 million in elementary and high schools — affects both elementary and secondary schools in a majority of the 48 states.

Building Needs: $5 Billion

Estimating cost of needed structures for the first time, the research division of the association came up with the figure $5,184,640,772 as representing current new building requirements alone. This does not account for repair and replacement of obsolete schools, or for future needs.

N.E.A. estimated that in the 1953–54 year 632,000 children may be forced to attend school for less than a full day, or 132,000 more than in 1952–53.

The report pointed out that approximately 50,000 classrooms were constructed in 1952–53, and a similar number in 1953–54 was anticipated; but despite all this activity, "construction is not keeping pace with classroom needs."

1960 Need: 425,000 Classrooms

The needs arise, said N.E.A., not only from increasing enrollments but also from deterioration and obsolescence of present buildings. The total need by 1960 was placed at 425,000 classrooms, according to Office of Education estimates.

Pointing up the current need, the association cited another of its studies showing that 33.2 per cent of the pupils in 526 urban communities surveyed were in classes enrolling 35 or more children each. If the classes in these urban places were limited to 30 pupils, a more feasible student load, 12,380 additional classrooms would be needed.

In December the U. S. Bureau of the Census published a report projecting enrollments in elementary and high schools through 1965. The report indicates a steady progression in the cumulative total for all grades during the years through 1965.

The census bureau says the enrollment in elementary and secondary schools will increase by more than 1.3 million per year, a rate of about four per cent, till in 1959 39 million children will be enrolled, or one-third more than in 1952.

Secondary Curve Rises

School architects will note that while elementary grades are expected to bear the major burden of the increases during the next several years, high school enrollments will be going up at a substantial rate too, increasing by at least three per cent annually from the middle of this decade through 1964. Peak growth rate will come in high school student numbers early in the 1960's. By 1960, said the census bureau, our high schools will enroll approximately 9.4 million students; and by 1965, 12 million. This compares with around seven million in the nation's high schools today.

EISENHOWER'S 1954 STATE OF THE UNION MESSAGE

4. Insurance of long-term mortgage loans, with small down payments for low-income families.

5. Continuation of the public housing programs adopted in the Housing Act of 1949 until alternative programs prove more effective.

Said the Eisenhower message: "If the individual, the community, the state and Federal governments will alike apply themselves, every American family can have a decent home."

In his discussion of defense matters, the President said the air power of the Navy and the Air Force would receive heavy emphasis budget-wise in the coming year. He urged more adequate living quarters and family housing units for military service personnel as an incentive for career service men.

"The ability to convert swiftly from partial to all-out mobilization is imperative to our security," said President Eisenhower. "For the first time, mobilization officials know what the requirements are for 1000 major items needed for military uses. These data, now being related to civilian requirements and our supply potential, will show us the gaps in our mobilization base. Thus we shall have more realistic plant expansion and stockpiling goals."

The President's message also:

— Called for Congressional approval of United States participation in construction of the St. Lawrence Seaway.

— Said he would at a later date detail a program of public works plans laid well in advance.

— Told of a current reappraisal of all Federal conservation and resources development projects. During fiscal 1955, work will be started on 23 projects.

— Promised the government would continue its central role in the Federal aid highway program.

Presidential PERSPECTIVES

The U. S. economy: "This Administration is determined to keep our economy strong and to keep it growing. . . . We shall not leave this vital matter to chance."

Hospital construction: "The present Hospital Survey and Construction Act should be broadened. . . ."

School construction: "The nation as a whole is not preparing teachers or building schools fast enough to keep up with the increase in our population. . . . In order to appraise the needs I hope that this year a conference on education will be held in each state, culminating in a national conference."

Housing: "If the individual, the community, the state and Federal governments will alike apply themselves to the purpose, every American family can have a decent home. And no good American family should honestly have to be ashamed of its home."

Business building: "For the business that wants to expand or modernize its plant, we propose liberalized tax treatment of depreciation, research and development expenses, and retained earnings."

Defense: ". . . The air power of our Navy and Air Force is receiving heavy emphasis." . . . "I strongly urge . . . a more generous use of benefits important to service morale. Among these are adequate living quarters and family housing units and medical care for dependents." . . . "For the first time, mobilization officials know what are the requirements for 1000 major items needed for military uses. . . . Thus we shall have more realistic plant-expansion and stockpiling goals. We shall speed their attainment." . . . "Military and non-military measures for continental defense are being strengthened. . . . In the next fiscal year we shall spend nearly $1 billion more for them than in 1953."

A.I.A. OFFERS PLAN FOR MPR STUDY AND REVISION

THE AMERICAN INSTITUTE OF ARCHITECTS has called for a complete study and revision of the much-lamented Minimum Property Requirements of the Federal Housing Administration.

A statement of the A.I.A.'s Home Building Industry Committee, approved by the Executive Committee of the Institute's Board of Directors, proposes to FHA the establishment of an advisory committee "small enough to work efficiently" and composed of men with "extensive experience at the operating level in home building."

The A.I.A. statement said in part:

"The original stated purpose of the Federal Housing Administration was to raise the standards of housing in America. It is realized that since the war progress in all phases of housing development has not been what it could have been. It is the considered opinion of the Executive Committee of the American Institute of Architects' Board of Directors that a revision of the Minimum Property Requirements could bring about the progress that both the FHA and the building industry desire on behalf of the American public.

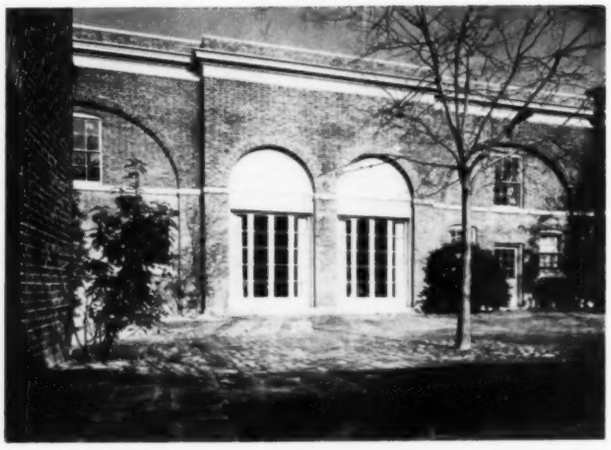
"The American Institute of Architects wishes to place itself at the disposal of the Federal Housing Administration to the end of revising the MPR and, equally important, the standards of appraisal. It is believed that the National Association of Home Builders will join the A.I.A. in this proposal.

"The opinion is advanced that a special committee composed of people intimately involved with the problem would more readily and more quickly produce results than would an existing organization. Such a committee of the industry could call upon the specialized knowledge of other organizations and bureaus.

"It is suggested that such an advisory committee be small enough to work efficiently and that it be composed of eminent men in the following fields: three architects whose practice is in the field of development building; one home builder in the field of mass operations; one home builder in the custom building field; one prefabricator; two or three engineers to cover the following fields — heating and air conditioning, plumbing, electrical; one person experienced in land planning for mass housing operations; two representatives of home mortgaging and financing."

THE RECORD REPORTS

A.I.A. OPENS NEW LIBRARY IN OCTAGON'S REMODELED STABLE



The old stable (above left) on the grounds of the Octagon House in Washington, national headquarters of the American Institute of Architects, was transformed under the supervision of Architect William Foster Dewey, of Howe, Foster and Snyder, Washington, to become the new A.I.A. library (above and left). Top: at the opening on January 11 — A.I.A. President Clair Ditchy presents Librarian George Pettengill with guest book for library; Mr. Foster (far left in photo) and A.I.A. Executive Director Edmund R. Purves (right) look on

---

JOINT NATIONAL CONFERENCE MAKES 1954 CHURCH AWARDS

Chester Freden

These churches were top winners among completed churches in the 1954 design awards of the National Joint Conference on Church Architecture held last month in Knoxville by the Bureau of Church Building and Architecture of the National Council of Churches and the Church Architectural Guild of America. Left (first award for completed churches of under-300 seating capacity) Christ the King Lutheran Church, Reseda, Cal. — Culver Heaton, architect; Serge I. Kolesoff, structural engineer. Right (first award for completed churches of over-300 seating capacity) Mount Zion Lutheran Church, Minneapolis — Armstrong and Schlichting, architects

(More news on page 15)

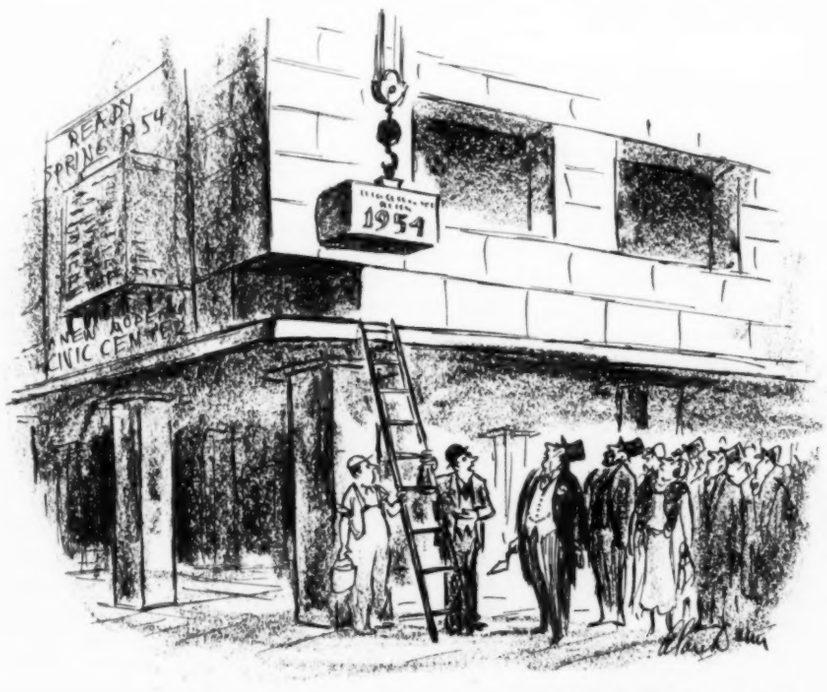
Good News

THREE HIGHLY RESPECTED private architects have been appointed by the State Department to a new four-man Foreign Buildings Architectural Advisory Board — and the State Department has assured the American Institute of Architects that in its overseas building program "able and distinguished private American architects will have a larger part than heretofore." These developments are the first public answers to some of the anxious questions raised after the recent departure as director of Foreign Building Operations of Leland W. King, whose tenure had opened a new era in State Department relations both with private architects and with contemporary design.

The architects named: Pietro Belluschi, dean of the School of Architecture and Planning at Massachusetts Institute of Technology; Henry R. Shepley, of Shepley, Bulfinch, Richardson and Abbott, Boston; and A.I.A. Past President Ralph T. Walker, of Voorheers, Walker, Foley and Smith, New York. Chairman and fourth member of the Board will be Col. Harry A. McBride, former Foreign Service officer and Assistant Secretary of State, and from '39 until his retirement last June as National Academy of Art administrator.

General function of the Board: "to improve the methods and operation of the Foreign Buildings Operation." The State Department gives it a broad charter: "A principal purpose of this Board will be to assist in the architectural design of all United States buildings overseas, including embassies, legations, consulates and diplomatic and consular and other personnel housing projects. The Board will also advise the Department's Foreign Buildings Operation concerning location of projects and the best types of material to be used in overseas construction, and will otherwise assist in maintaining standards of utmost economy and usefulness throughout the program." The Board was to hold its first meeting late last month.

The State Department's assurances to the A.I.A. were conveyed in a letter from Assistant Secretary of State Edward T. Wailes to A.I.A. Executive Director Edmund R. Purves in answer to a letter from Mr. Purves, who had expressed the Institute's hope that the departure of Mr. King would not mean abandonment of a policy which "allowed the most distinguished private architects to express freely the highest development of their art under official sponsorship of the United States Government." Mr. Wailes' letter noted the then forthcoming appointment of the advisory architects and added: "We definitely plan to rely upon the resources of private architects for a major portion of our program."



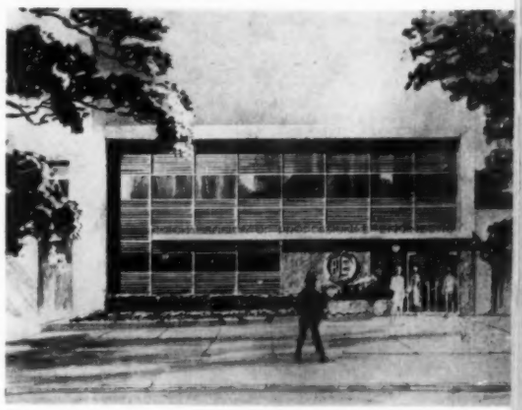
— Drawn for the RECORD by Alan Dunn

"If you please, Mr. Mayor —"

Wanted: More Research

THE AMERICAN HOSPITAL ASSOCIATION Board of Trustees at a recent meeting voted to seek funds for a joint research program of A.H.A. and A.I.A. aimed at "better care and long-term economy." A.H.A. trustees agreed entirely too little money is being spent on architectural research in the hospital field.

The National Society of Professional Engineers has begun construction of this $230,000 headquarters building at 2029 K Street NW, Washington, D. C. Lawrie and Green are architects and engineers. The Society is not to be confused with its brother engineering organizations, which, having outgrown their New York headquarters at 29 West 39th Street, were — at last reports — still shopping for a new headquarters



Wanted: More Research

THE GREATEST RELUCTANCE in acceptance of responsibility for construction research lies with the professions and other non-manufacturing segments of the building industry, according to William H. Scheick, executive director of the Building Research Advisory Board. Addressing the Building Research Conference of the National Research Council of Canada, Mr. Scheick said this failure to recognize or accept responsibility for research constitutes a general handicap to integration of research. With specific reference to housing, Mr. Scheick said: "These are the men who can be interested primarily in housing as twentieth century shelter for human beings, and who should be able to hold

(*Continued on page 16*)

(*Continued from page 15*)

the concepts which lead to exploration of design functions, building processes, and social and economic gains." It will be a great day, Mr. Scheick felt, when architects, engineers and contractors will be — as he noted building materials producers are today — willing to "dig down into their own pockets" to support their own research programs.

Architects Honor Craftsmen

THE WEST VIRGINIA CHAPTER of the A.I.A. makes an annual custom of giving Craftsmanship Awards to two building craftsmen in recognition of "exceptional work and individual initiative and skill in the various building trades." This year's awards, given as usual with some ceremony at a special dinner meeting, went to G. Graham Holloran, Charleston, W. Va., a brick mason for 43 years; and S. M. Kistner, Fairmont, W. Va., roofing-sheet metal worker whose firm, Kistner and Sons, must be one of the largest father-and-son establishments in the country — there are nine sons, all of them trained by their father in the trade. A.I.A. Middle Atlantic Regional Director Marcellus Wright Jr., who made the major speech of the occasion, recalled the profession's historic relationship with the craftsman from the architect's own genesis as the "master craftsman" and expressed his firm conviction that craftsmanship is no less important today because architecture is in an "era of austerity." In fact, Mr. Wright said, "What we architects are concerned about in this era of transition is particularly to see to it that every part of our building structure is accomplished in the best possible manner — as imperfections and careless workmanship show up to a much greater degree than ever before."

At left in model photos above and below: Hotel Copan, Sao Paulo, Brazil (ARCHITECTURAL RECORD, Oct. 1953, pp. 135–142), as it would look if Intercontinental Hotels chose Brazilian Architect Henrique Mindlin's proposal for exterior treatment. Holabird & Root & Burgee are associated architects. Curved structure adjacent is proposed apartment building designed by Oscar Niemeyer

Sculptors Elect

LEO FRIEDLANDER was elected president of the National Sculpture Society at its 60th annual meeting held last month in New York. He succeeds Wheeler Williams. Other new officers: Nathaniel Choate, first vice president; Lawrence Grant White, second vice president; Clyde C. Trees, treasurer; Frank Eliscu, secretary; and Adolph Block, recording secretary.

The Lucky Ones

OFF ON THE "ARCHITECTS' TREK 'Round South America" January 19 were 23 trekkers, by plane from Miami to Panama, Peru, Chile, Argentina, Uruguay and Brazil and back to Miami on February 19. This winter's trip is another in the series specially arranged for A.I.A. members and their families by the U. S. Travel Agency. According to Trip Leader Harold R. Sleeper, the roll reads as follows: Mr. and Mrs. George Shanley, Great Falls, Mont.; Mr. and Mrs. H. J. Hamer, Los Angeles; Miss Janet E. Hooper, New Orleans; Bartlett Cocke, San Antonio; Mr. and Mrs. J. R. F. Swanson, Bloomfield Hills, Mich.; Mr. and Mrs. J. W. Floore, Fort Worth; L. G. Redstone, Detroit; Mr. and Mrs. E. T. Heitschmidt, Pasadena; Mr. and Mrs. E. R. C. Billerbeck, Santa Monica; Mr. and Mrs. Donald Grieb, Milwaukee; Mr. and Mrs. Walter Rolfe, Houston; Mr. and Mrs. R. L. Kelly, Champaign, Ill. — and, of course, Mr. and Mrs. Harold R. Sleeper, New York.

Worth the Winning

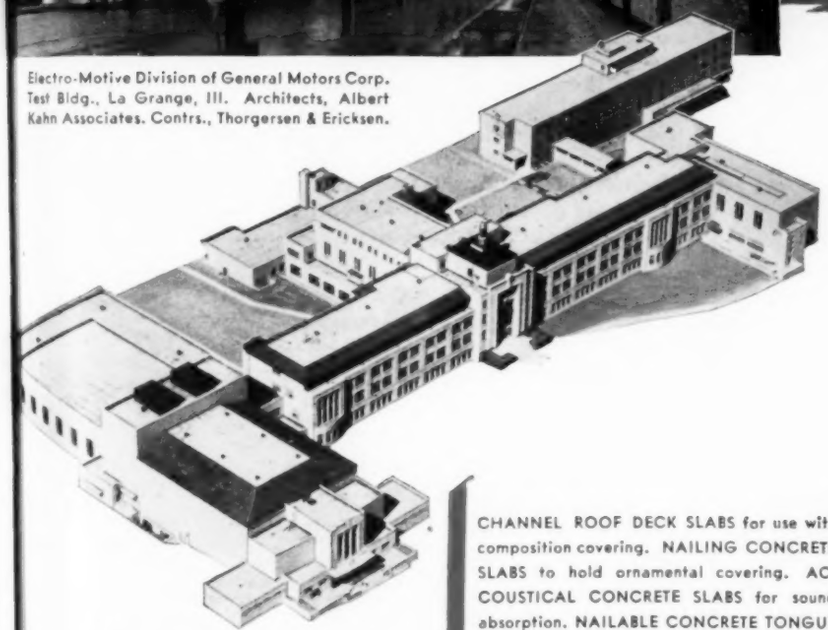
EXERCISES preliminary to the selection of the 65th winner of the **Rotch Traveling Scholarship** will be held in April. Applicants must be American citizens, under 32 on May 1, 1954. Details from: William Emerson, Secretary, Rotch Traveling Scholarship Committee, 107 Massachusetts Ave., Boston 15, Mass. . . . The Architectural League of New York invites submissions for the **Birch Burdette Long Memorial Prize** ($200) architectural rendering exhibition to be held at the League April 12–23. Details from the League, 115 E. 40th St., New York 16, N. Y. . . . The University of Pennsylvania has announced 10 graduate fellowships and scholarships for 1954–55 in architecture, landscape architecture, city planning and design — the **Albert Kahn Memorial Fellowship** of $1100; the **Ellen L. Matlock Fellowship** of $1200; three **Theophilus Parsons Chandler Fellowships** of $1200 each (for study or travel abroad — open only to U. of Pa. Graduates); three **Graduate Tuition Fellowships** of $700 each; a **Fellowship in Landscape Architecture** of $1250; and the **Albert F. Schenck Memorial Traveling Scholarship** (for U. of Pa. students). Applications must be made by March 1 to the Dean, School of Fine Arts, University of Pennsylvania, Philadelphia 4, Pa. . . . Graduates of Harvard's School of Design may apply for two **Arthur W. Wheelwright Fellowships** of about $4000 each to be awarded this year by the Department of Architecture for travel and study abroad. Recipients must be under 30, have professional experience. Other details from: Dean Jose L. Sert, Graduate School of Design, Robinson Hall, Harvard University, Cambridge 38, Mass. . . . Applications will be received until May 15 for the University of Illinois' 23rd annual **Kate Kinley Neal Memorial Fellowship** of $1000 for advanced study at home or abroad in music, art or architecture. For further information: Dean Rexford Newcomb, College of Fine and Applied Arts, Room 110, Architecture Building, University of Illinois, Urbana, Ill.

(*More news on page 20*)

NOTHING PER YEAR !

...That's what it costs to maintain a FEDERAL FIRESAFE CONCRETE ROOF DECK...

Electro-Motive Division of General Motors Corp. Test Bldg., La Grange, Ill. Architects, Albert Kahn Associates. Contrs., Thorgersen & Ericksen.



Alverno College, Milwaukee, Wisc. Architects and Engineers, Maguolo & Quick. Contractors, James McHugh Construction Company.

CHANNEL ROOF DECK SLABS for use with composition covering. NAILING CONCRETE SLABS to hold ornamental covering. ACOUSTICAL CONCRETE SLABS for sound absorption. NAILABLE CONCRETE TONGUE AND GROOVE ROOF PLANKS for both flat and sloping surfaces.

YOU PAY for your Federal Concrete Roof *just once* and for all time. There is no continuing expense for painting, repairs or replacements as long as the building stands. Only everlasting concrete makes this possible. No other roof deck material equally withstands the punishment of extreme temperatures, water, ice, smoke, fumes, rust and other disintegrating factors.

Your Federal Concrete Roof Deck combines sound, structural strength with extreme light weight. It will not conduct heat to the asphalt or pitch roofing and provides an effective barrier against the spread of fire. Precast *Featherweight* Slabs or Planks often permit substantial economies in the roof superstructure. And Federal Roof Decks are installed by our own crews *on schedule*, in fair or foul weather.

All Federal Roof Decks are ready for composition or ornamental covering as soon as they are laid. Regardless of the type of building you are planning there is a Federal-*Featherweight* Concrete Roof to meet your exacting requirements, both structurally and budget-wise. We will gladly assist with roof layouts and estimates on request to Dept. R401.

SEE OUR CATALOG IN SWEET'S

FEDERAL-*Featherweight* PRECAST STRUCTURAL CONCRETE ROOF SLABS

FEDERAL-*Featherweight* PRECAST CONCRETE TONGUE & GROOVE ROOF PLANKS

ANY BUILDING – INDUSTRIAL OR INSTITUTIONAL – IS A BETTER BUILDING WITH A FEDERAL ROOF

MADE, LAID AND GUARANTEED BY

FEDERAL CEMENT TILE COMPANY

EXECUTIVE OFFICES: 608 SOUTH DEARBORN ST., CHICAGO 5, ILL.

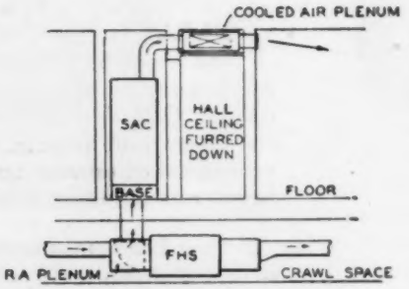
FOR OVER FORTY-FIVE YEARS *SALES OFFICES IN PRINCIPAL CITIES*

Let others talk about the weather

...you can control it with ®*Janitrol* Cooling

With the Janitrol Summer Conditioner, Model SAC, you have new flexibility in designing year 'round conditioning in either residential or commercial installations. The sketches below show a few typical arrangements in combination with vertical, horizontal and duct heating units.

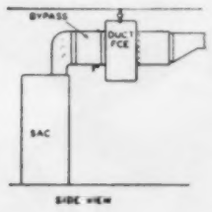
HORIZONTALS

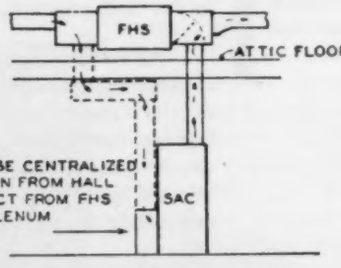


COOLING UNIT LOCATED IN CLOSET WITH DISTRIBUTION FROM CENTRAL HALL PLENUM AND RETURN AIR IN CONNECTION WITH HEATING SYSTEM IN BASEMENT

VERTICALS

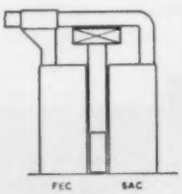
DUCTS

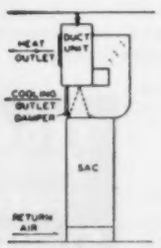




FHS IN ATTIC - SAC IN CLOSET OR UTILITY ROOM

SIDE VIEW





WRITE TODAY FOR COMPLETE SPECIFICATIONS AND DETAIL DRAWINGS

Specify the finest year 'round conditioning

...with confidence!

®Janitrol Win-Sum Twins

ALL SEASON COMFORT NOW PRACTICAL FOR HOME AND BUSINESS

Year 'round conditioning, the Janitrol way, need not be confined to so-called luxury installations. This year, Janitrol Win-Sum Twins will help your builder clients move their houses-for-sale easier and faster.

In your modernizing and building additions work, the inclusion of summer cooling can increase property values far more than the cost of Janitrol cooling equipment.

For your client's protection, you can depend on well engineered installations of Janitrol year 'round conditioning ideally suited for your plans. Because, Authorized Janitrol dealers are selected for their experience . . . are factory and field trained in modern installation techniques.

SPACE SAVING
You need only a 27" square for the 2 or 3-ton Janitrol conditioners. They are out of the way in the utility or recreation room.

5-YEAR WARRANTY
The Janitrol unit is factory sealed. Maintenance is minimized. This cooling system is fully covered by a 5-year warranty.

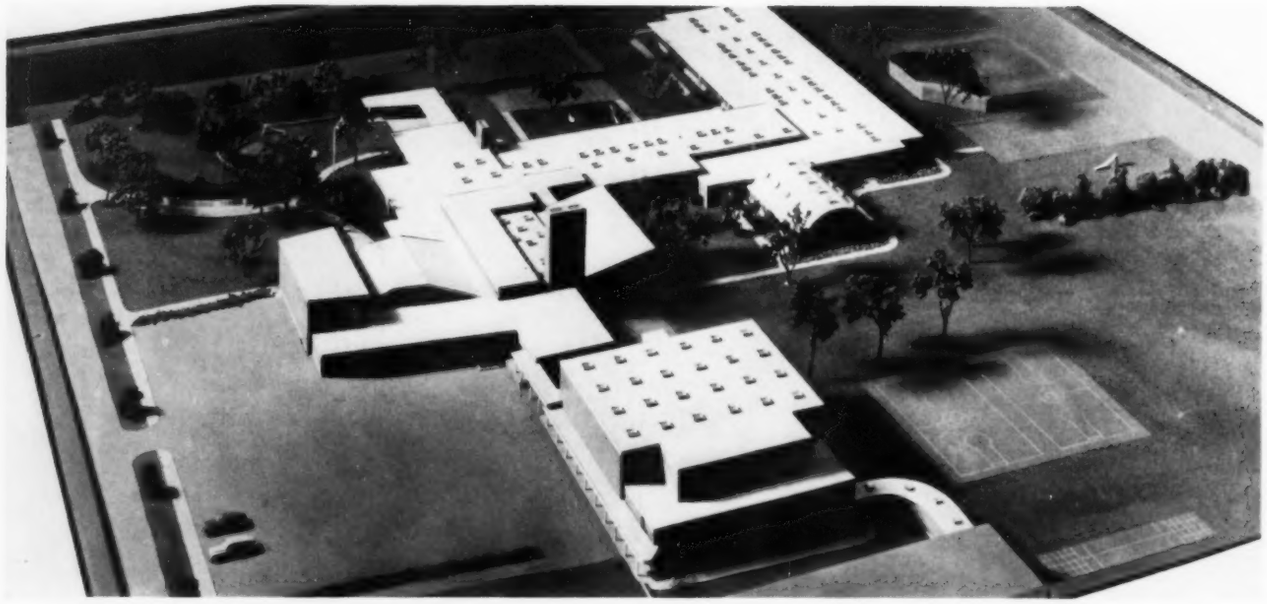
WHISPER QUIET
Janitrol is the quietest unit made. Rubber mountings and thick insulating blanket lining efficiently absorb operating sounds.

FILTERED COOLING
Over 5 square feet of filters removes the dust, dirt and pollen from Janitrol cooled air for a healthier, cleaner home.

Check yellow pages in your phone book under "furnaces" for names of local Janitrol representatives.

®Janitrol

DIVISION • SURFACE COMBUSTION CORP.
400 DUBLIN AVE., COLUMBUS 16, OHIO



ONE SCHOOL USES PORCELAIN ENAMEL IN 20 WAYS

THE VERSATILITY OF PORCELAIN ENAMEL as a building material — the quality so consistently stressed at the Building Research Advisory Board's recent conference in Washington — might well get a graduate Q.E.D. for the multiplicity of its uses in the Whiting Lane Elementary School, now under construction in West Hartford, Conn. There it is being given no less than 20 different applications — at least four of them, as far as Architects Moore and Salsbury and their fabricator know, brand new uses.

Why so much porcelain enamel? In the architects' own words, they were impressed with its "adaptability, its strength, its lightness, its limitless color possibilities, and its apparent adaptability to various anchoring methods in conjunction with other materials." As to cost, they say: "A check after the general bidding on this job leads us to believe that our use of porcelain enamel steel compares favorably from the standpoint of economy with other permanent materials which might have been substituted."

How It Is Used

"New" uses of porcelain enamel in the Whiting Lane School are described as follows:

1. As a roofing material — the curved roof on the kindergarten playroom will have as a roofing material porcelain enamel laminated to $\frac{1}{4}$-in. plywood — fabricated in sections to follow the curve of the roof (approximately 3000 sq ft in area).

2. As covers for the diamond-shaped steel trusses in the dining room.

3. As a decorative element in light fixtures in the auditorium.

4. As both plain and acoustical panels in the auditorium and dining room. The porcelain enamel panels will be perforated and backed with a fiber glass or other acoustical material.

Also listed are 16 more familiar applications of porcelain enamel: structural members under windows; bulkhead panels below windows; header panels over windows; coping panels on entire job; window sills; covering for elevator shafts; covering for exterior walls on gymnasium; name letters on front wall; window stools; convector fronts; wall panels in main reception hall; acoustical baffles in auditorium; mural in kindergarten and on front of building; chimney coping; porcelain ventilating louvers; porcelain door to storage loft.

As the architects summarize it: "We have used the material extensively with plywood core for all spandrels, and without the core for fascias and for large unbroken areas where a weather seal was required. It is also used to form the curved roof over the playroom, the other exterior material being a native red brick. Many interior walls are panelled with porcelain enamel steel, in both solid panels and perforated panels with acoustical pad backup. We have found the material particularly adaptable to curved surfaces such as breaks in the ceiling of the auditorium, and for other incidental details, such as light fixtures."

Contract Cost: $1,384,233

The contract amount for the complete project, including a gymnasium adjacent to but not attached to the school, is $1,384,233. Construction is well under way, and it is hoped the job will be completed by September.

The school will have 14 classrooms and a kindergarten and is planned to accommodate 450 children. Other facilities are kitchen, dining room, auditorium, small gymnasium or playroom, Boy Scout room, administration, health, teachers' and conference rooms.

The structural system consists of a steel frame with bar joists, masonry interior or corridor bearing walls, concrete floor slab on ground fill, and concrete roof planks. Classrooms are square and are lighted along the inside walls from ceilings pierced by plastic skylights. Corridors and other spaces are also lighted by skylights. Classroom skylights have an integral roller shade between the skylight and the ceiling dome for darkening.

(*More news on page 24*)

ORDER *A Sample* TITUS GRILLE

IT FEATURE FOR FEATURE WITH EVERY OTHER GRILLE ON THE MARKET TODAY

4 SOLID SECTION AIRFOIL LOUVERS..... Smooth as glass. Streamlined. Eliminate turbulence. Control air properly.

5 ONE-PIECE FRAME..... Adds new beauty to any installation. No unsightly corner cracks or corner patches.

6 EXTRA STRENGTH..... Without clumsy bulk. Easy to carry. Easy to handle.

7 CLEAN WITHOUT REMOVING GRILLE... Removable core not necessary Made available, however, if desired.

8 LOW NOISE LEVEL..... Streamlined louvers handle air with near perfect performance. Hold noise level to absolute minimum.

Before you start your next job, order a sample grille. Prove to yourself by *True* comparison . . . holding the grille in your hands . . . that you get better grille construction, more beauty, and consequent better grille performance from TITUS OUTLETS. ORDER TODAY.

* SALES OFFICES IN ALL PRINCIPAL CITIES

FREE 1953 CATALOG

MAIL COUPON NOW

TITUS MANUFACTURING CORP., WATERLOO, IOWA

CHECK TYPE OF GRILLE ON WHICH SPECIAL INFORMATION IS DESIRED.

- ☐ Air Conditioning outlets
- ☐ Return air grilles and registers
- ☐ Volume controllers
- ☐ Door ventilators
- ☐ Special made-to-order grilles
- ☐ Send complete New 1953 Catalog

NAME _____

ADDRESS _____

CITY _____ STATE _____

O P I N I O N

Senate Minority Leader Lyndon Johnson (D-Tex.) believes a greatly increased reliance on private architects could save the government money — and he intends to press the point. His views as expressed in a speech before the annual convention of the Texas Society of Architects at Austin in November reflect an understanding of the architect's function rare in a layman — and include some interesting comments on the North African air base difficulties. Text of the speech follows.

A BASIC CHARACTERISTIC of modern times is the stress on specialization. As life becomes more complicated, knowledge becomes more difficult to acquire.

The result has been the rise of the specialist — the expert who has exhausted all knowledge in one field — at the expense of other areas of thought.

It is difficult to find any branch of knowledge today which is not divided into hundreds of specialties. Law, medicine, physics, economics, have all been staked out into neat little plots like a real estate development.

We even have specialists on specialists — the lawyers who study your case and tell you which specialist should handle it; the doctors who study your illness and decide which physician should treat you. . . .

The trend cannot — and should not — be halted. The machines and tools of our everyday life have become too complicated. They can be handled only by highly trained technicians — men who have spent a lifetime in the field.

But there are dangers in the trend. Somewhere, there must be people who can put the highly complicated machines together. Somewhere, there must be men who know how to adapt the tools of one field to another.

As I understand it, that is the function of the architect. He is the man who understands the complete job — from inspiration and design to completion and use.

In the modern world, he is one of the few who can really look at a project and say: "That is mine — from start to finish."

As a Member of Congress and a Senator, I have had considerable indirect experience with construction in recent years.

Much of that experience is due to my position on the Senate Armed Services Committee which handles the military construction bills. A good deal of it arises from my interest in conservation and flood control.

Like every American, I have been greatly concerned over the huge cost of many of our public works — both civil and military. The expense is staggering. And yet, the reasons behind this high cost are often difficult to find — even through an on-the-spot investigation.

Part of the cost is sheer waste. A certain amount is always inevitable on huge projects. I do not think it has to be as high as it is. But there will always be some waste in materials, men, and money.

We can eliminate waste completely only when we create a new type of human being.

But another — and far more important cause of high cost — is duplication and lack of planning.

As chairman of the Senate Preparedness Committee during the preceding Congress, I investigated a number of construction projects. The information that we turned up was deeply disturbing to anyone who had the interests of our taxpayers at heart.

Cases of fraud and theft were relatively rare. Cases of incompetence were more frequent — although not so much as generally supposed. But cases in which men were put to work on jobs for which they had no experience were more than frequent. They were almost customary.

In almost every outstanding instance of high and unnecessary cost, there was one common characteristic. It was the lack of a plan — the lack of supervisors who understood the overall requirements of construction.

In the case of construction, I checked to determine the extent to which the Federal government made use of architects. I found that it was an extent far more limited than I had assumed.

Many agencies seemed reluctant to concede the status of architects as a profession. In many instances — particularly in the military — they appeared to be "engineer" minded.

I have no intention of decrying engineers. It is an ancient and honorable profession — one that commands my respect. I do not, however, expect the engineer to perform the architect's work any more than I expect the architect to play the role of engineer.

There was one case which we investigated that particularly held my attention. It involved the construction of five air bases in North Africa.

According to the latest report I have received, that construction job is now in good shape. That was not the case when our Committee first got into it.

Our investigators found widespread loafing on the job; padded expenses; faulty and substandard construction and a lack of accounting control that was fantastic.

There is no point at this time in trying to pin down responsibility for these conditions. There was no large-scale crookedness beyond the petty pilfering that always exists around huge construction projects.

But there were two glaring faults which will illustrate my point.

First, there was an almost complete lack of advance planning. The job was tackled in such a haphazard way that the planlessness seemed determined.

Second, the architect-engineer was reduced at the start to the status of a subordinate to the district engineer. He could make recommendations but they could be — and usually were — overruled.

In other words, the organization specifically charged with inspection and supervision was permitted only to inspect. Its role as supervisor was forgotten completely.

When we dug into the files, we found that practically all of the more glaring deficiencies had been spotted in advance by the architect-engineer. But his warnings were not heeded. About all he could do was protest. Nobody paid much attention until the Preparedness Committee became interested.

There was no evidence of fraud. It was simply that the men on the scene had no concept of the role the architect could play. They did not appreciate the value of the long-term, overall approach.

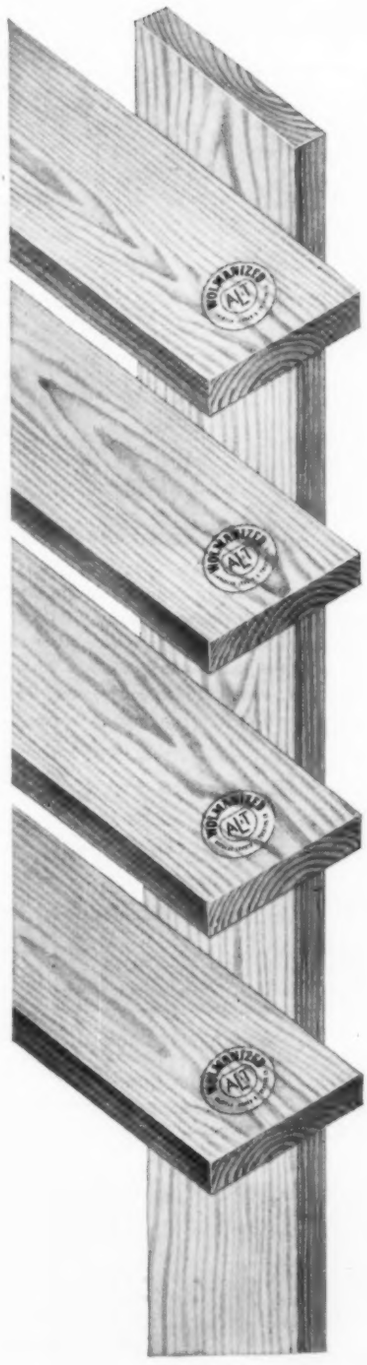
Recently, I made a check of three of the principal construction agencies in Washington. They are the General Services Administration, the Bureau of Reclamation, and the Corps of Engineers.

In each case, I asked whether there had been any change in their policies on the use of outside architects. In each case, the answer was "No."

The General Services Administration said that it uses architects to the maxi-

(*Continued on page 328*)

*Wolmanized
LUMBER
is your assurance



. . . Because only Wolmanized clean pressure-treated lumber gives you all four of these important advantages:

1 uniform treatment

Basic *Wolman salts are produced under a single exacting standard of control. And the pressure-treatment process by which Wolmanized lumber is made is the same throughout all 14 sources operating 24 pressure-treatment plants. Wherever you buy Wolmanized lumber, you can be certain of uniform undeviating standards of treatment.

2 application versatility

No matter what use you may have for treated lumber, Wolmanized lumber will serve your purposes . . . and serve them better. Deadly to rot and termites, Wolmanized lumber is clean, odorless, completely paintable, harmless to clothing and skin, and noncorrosive to metal fittings.

3 available anywhere

It is easy to specify Wolmanized lumber by name. And delivery is assured, since Wolmanized lumber is produced coast-to-coast and in Canada by 24 recognized and dependable wood-preserving plants. You are assured, too, by the fact that 47% of all clean pressure-treated lumber is Wolmanized lumber . . . nearly as much as the total output of all other sources combined. You are assured of a nationally recognized and accepted product with Wolmanized lumber.

4 proved dependability

Actual service records prove that Wolmanized pressure-treated lumber lasts years longer. Even under the most demanding conditions . . . such as "Wet Process" industries . . . Wolmanized lumber gives many times the service of untreated lumber, or lumber that has merely been dipped in preservative. For further information write: American Lumber & Treating Company, McCormick Building, Chicago, Illinois.

*"Wolman" and "Wolmanized" are registered trade names of American Lumber & Treating Co.

Pressure-Treated

Wolmanized
LUMBER

NEWS FROM CANADA *By John Caulfield Smith*

SCHOOLS TOO ELABORATE? AN ARCHITECT REPLIES

RANDOLPH C. BETTS, Montreal architect, undertook to answer the question "Are School Buildings Too Elaborate?" in a recent address to the Home & School Association of the Town of Mount Royal.

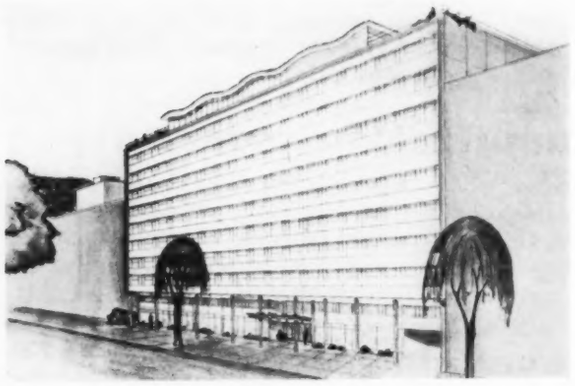
Mr. Betts pointed out that the functions expected of a school building have expanded considerably in the past 30 years. In line with other social changes in such areas as working conditions, industrial relations, housing and recreation, more is demanded generally in the way of service, appearance and pleasure. This goes for school buildings as well.

Economic and social changes in the family structure, he went on, cause many to depend upon the school for services formerly rendered within the home — nursery care and kindergartens, for children of working parents; lessons in homemaking, no longer so invariably taught at home; space for games and athletics, for city dwellers. Furthermore, Mr. Betts noted, there is more consideration today for the comfort of school employes.

In addition, he continued, school planners cannot be unaware of possible future changes. Population growths, which can be predicted with some accuracy, will require corresponding ex-

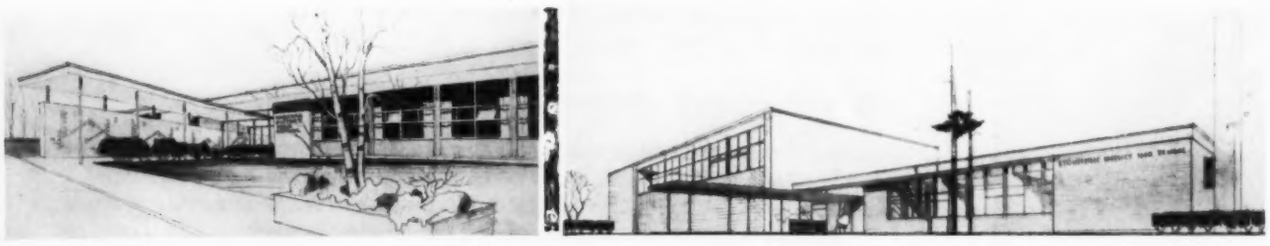
(Continued on page 30)

SOME CURRENT PROJECTS FROM CANADA

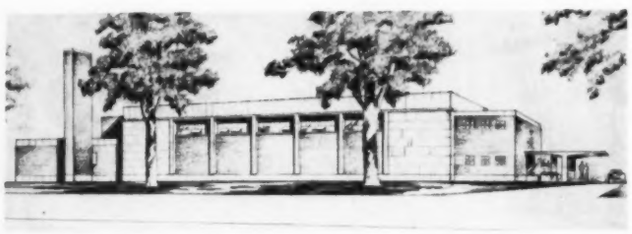


Architect's rendering of an office building planned for the Zed Corporation in Montreal. The street floor of the ten-story building will be occupied by stores. Arnold Schrier, of Montreal, is the architect

McColl-Frontenac Oil Company Ltd. also plans a new office for Montreal. Construction of the T-shaped building will be of reinforced concrete, with buff brick facing and granite trim. Architects are Barott, Marshall, Montgomery and Merrett



Above: two school projects by architects Stone & Moffat of Toronto. At left, the District High School for Markham, Ont., provides for 310 students. At right, the Stouffville, Ont., District High School, with seven classrooms, will take care of 250 students



Below: two projects for the Canadian Army. Left, addition to Headquarters Building, Central Command, Oakville, Ont. Richard A. Fisher, architect. Right, training building and heating plant, Staff College, Kingston, Ont. Mr. Fisher and Blake H. M. Tedman, architects

ELECTRICAL SYSTEM PLANNING for the building was based on engineering teamwork like this. Left to right are G-E application engineers Carl Degering and Kenneth C. Moulton of G.E. Supply Co., who worked with May Co. chief engineer, Norman Sneeden, and C. P. Haist of Albert C. Martin and Assoc., architects and engineers for May Co. and Lakewood shopping center.

helps assure shoppers' comfort

Engineering teamwork of consultants and General Electric specialists solves electrical design problems at Lakewood, California store

At the new May Co. store in Lakewood, Calif., a primary consideration in preliminary planning was the design of a complete electrical system which would be highly efficient, simple to install, and easy to maintain.

While their plans were still on the drawing board, Albert C. Martin and Assoc., architects and engineers, and May Co.'s chief engineer, Norman Sneeden, teamed up with General Electric application engineers to design a co-ordinated electrical system.

As a result of this engineering co-operation, time, work and money have been saved. Dependable G-E power distribution system keeps economical high-voltage power supplied to refrigeration, moving stairways and elevators. G-E motors and control on air-conditioning equipment help keep service continuity high, maintenance low.

You, too, can take advantage of the same kind of specialized engineering assistance by letting a G-E engineering team help you and your consultants plan your commercial building project. Call in your local G-E Apparatus Sales Representative ***early in the planning stage*** when he can be of the most help to you in designing an electrical system just right for your project. Or, write on your letterhead to General Electric Co., Apparatus Sales Division, Section 665-121, Schenectady 5, New York.

Engineered Electrical Systems for Commercial Building

GENERAL ELECTRIC

CANADA (*Continued from page 26*)

pansions in schools. This condition sometimes leads to seemingly extravagant provisions which may in the end prove to be economical foresight.

Aside from social changes, Mr. Betts mentioned recent improvements in building materials. The use of such materials as rubber tiles, acoustic ceilings, plywood and structural glass, he remarked, gives a building an appearance of luxury, deceptive in that it is not as costly as it seems.

Mr. Betts did not venture to judge whether or not schools *are* too elaborate. Part of the answer, he admitted, will have to wait for the passage of a few years. But the final consideration, he concluded, is the success with which the school meets the demands of the community.

GLOBE
SPRINKLERS
FIREMEN EVERY 10 FEET
HOW TO CUT HIGH INSURANCE COSTS
You can make big savings in your annual FIRE insurance premiums, and improve your property with *permanent FIRE protection* by installing GLOBE Automatic Sprinklers. Act now to make these savings . . . ask our nearest office for details.
GLOBE AUTOMATIC SPRINKLER CO.
NEW YORK . . . CHICAGO . . . PHILADELPHIA
Offices in nearly all principal cities
THEY PAY FOR THEMSELVES

OTTAWA CHAPTER OFFERS PARTIAL DESIGN SERVICE

A new project of the Ottawa Chapter of the Ontario Association of Architects is the Small Homes Architectural Service, which offers partial architectural services for residential work. The service is available, for a fee of $150, for any house costing under $15,000.

For that fee the client receives from the architect (1) one visit to the site prior to the preparation of any drawings; (2) rough sketches leading to one set of sketch plans drawn to scale; (3) a complete set of working drawings following the corrected sketch plans, and four sets of prints of the plans; (4) a standard mimeographed specification covering qualities of material and workmanship; and (5) interviews and guidance to the owner at the architect's convenience during the planning stage. Supervision of construction is not included as part of the service, since the project is conducted as a spare-time venture. Plans will remain the property of the Small Homes Architectural Service and may be resold. Two houses have already been designed by the chapter.

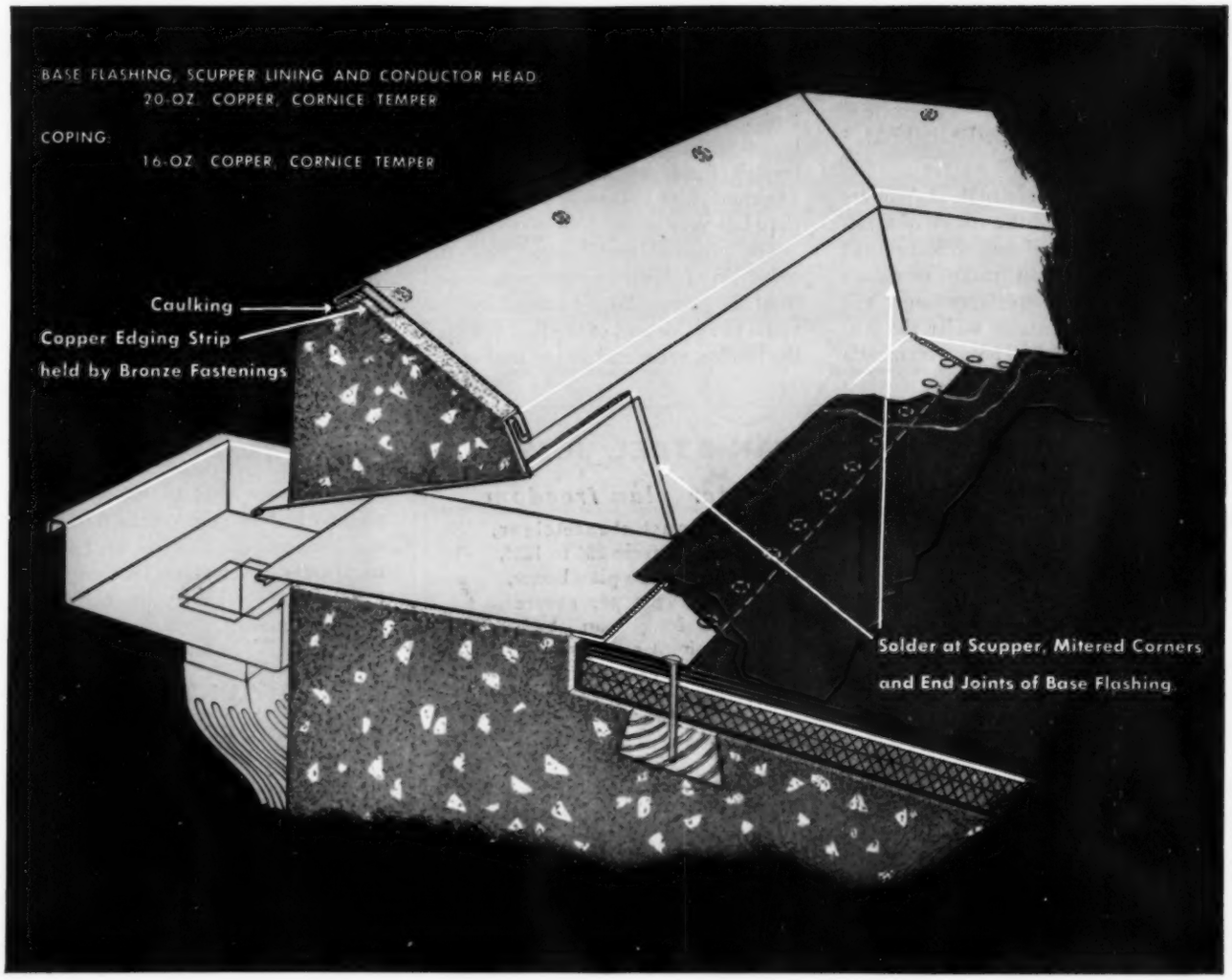
Future Services Planned

If the service proves successful, the group plans to open a permanent office where information and literature on home building can be distributed. Other plans for the future include a booklet for the prospective home builder giving information on building laws and zoning regulations. A series of lectures is also being considered, to cover topics ranging from the choosing of a site to the landscaping of it.

The aims of the Small Homes Architectural Service were expressed by the chairman, R. Stirling Ferguson, who said, "We propose to supplement the work of larger organizations which have been operating on a national scale. It's impossible for them to study the needs of every individual community, and we are interested only in Ottawa."

It is estimated that the architect will spend about 90 hours of his time on each project. He will receive $125 of the fee, the remaining $25 of which will go to the Ottawa chapter to cover administrative expenses.

(*Continued on page 32*)



Flashing design for parapet with roof scupper

On buildings where the parapet is designed as little more than a curb and in climates where snowfall is not severe, scuppers leading to outside downspouts offer an economical method of providing for roof drainage.

This drawing shows the details of a base flashing and scupper lining secured to the roof deck. A 16-oz. copper coping, joined to the 20-oz. base flashing with a loose clinch lock, protects the vertical mortar joints of the masonry. Free-sliding, weathertight expansion joints should be installed on the copper coping at 24-ft. intervals and wherever expansion is provided for in the structure. 5346

Do you have the FREE Anaconda Portfolio of Sheet Metal Drawings?
Each drawing shows a new or improved way to apply sheet copper. Each is printed on a separate 8½ x 11-inch page, handy for quick-reference filing. This entire series may be obtained absolutely FREE. Write today for Portfolio S to **The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.**

for better sheet metal work — use

ANACONDA®

copper

CANADA (*Continued from page 30*)

LAWMAKERS TO CONSIDER NEW MORTGAGE PROPOSALS

Public Works Minister R. H. Winters has introduced into the House of Commons a bill which, if passed, will permit chartered banks to make mortgage loans, will insure mortgages and will provide easier financing under the National Housing Act. The government's argument is that present sources of building loans, such as insurance and loan companies, are not likely to provide enough funds to support a housing program which is expected to be bigger than last year's.

The proposals put forward are: the reduction of down payments on houses from the present 20 per cent of lending value to 10 per cent of the first $8000 of the lending value and 30 per cent of the balance; the extension of mortgage terms to 25 years instead of the 20 years which is now the general rule; payment, by the home buyer, of an insurance premium of 2 per cent of the amount of the first mortgage, the premium being capitalized as part of the mortgage loan — on rental housing the premium will be 2½ per cent; the authorization of banks to borrow from the government-owned Bank of Canada on the security of the insured mortgages, these becoming collateral as good as government bonds; and the insurance of mortgage loans when made to finance the conversion of existing dwellings into duplexes or other multiple units.

There are two points not covered by the bill — the rate of interest to be paid by home buyers on the mortgages, and the amount to be set as the maximum loans. It is planned that these matters will be settled by the cabinet by order-in-council.

JAMES PATRICK HYNES, 85, DIES IN TORONTO, ONT.

James Patrick Hynes, Toronto architect, died recently at the age of 85. Mr. Hynes was a past president of the Royal Architectural Institute of Canada and of the Ontario Association of Architects. He had also served as president of the Architectural League of America.

Born in Toronto, Mr. Hynes was the son of the late Michael and Margaret O'Connor Hynes, and graduated from St. Michael's College. He established his practice in 1895, retiring about 15 years ago. Among Mr. Hynes' better-known buildings were St. Peter's Church on Bathurst St., Our Lady of Lourdes Church, St. Michael's Hospital, De La Salle Training College, Oak Ridges, and Congress Hall in Montreal.

In recognition of his services to the Catholic community, Mr. Hynes had received the Benemerenti Medal from the Pope.

GOVERNMENT GRANTS LOAN FOR MILITARY HOUSING

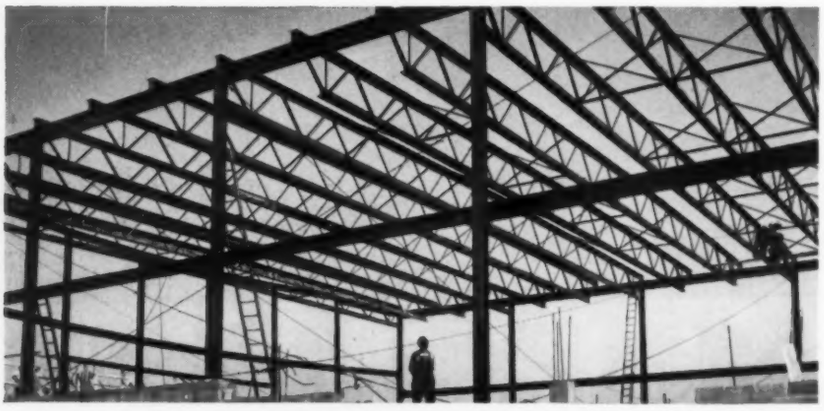
The first low-rental housing development to be built by a private firm for servicemen and their families has been announced by the Department of Public Works. With a loan of $1,012,999 from the Government, Cobourg Rental Homes Ltd. will build a 132-unit project for

(*Continued on page 36*)

T-CHORD LONG SPAN STEEL JOISTS

give greater plan freedom

Wherever you must create clear, column-free areas . . . from 25′ to 125′, or larger multiples . . . you plan better, freer and for lower cost per square foot with T-Chord long span steel joists. Framing is simpler, stronger,



GRAND HAVEN SENIOR HIGH SCHOOL, GRAND HAVEN, MICH. ARCHITECT: WARREN S. HOLMES

faster . . . with lighter columns and footings. Enclosed joist areas permit wide latitude for lighting, ducting, ventilating, insulating or sound-proofing. And when exposed, T-Chords afford a pleasing textural-web perspective. Our extensive engineering service may be of great value to you. Write, wire or phone us for whatever information you may wish.

See Sweet's Architectural File, Sweet's Industrial File, No. 2CHA.

AISC — AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC. — FOUNDED 1921

STRUCTURAL STEEL
MISCELLANEOUS IRON
T-CHORD LONG SPAN JOISTS
ORNAMENTAL IRON

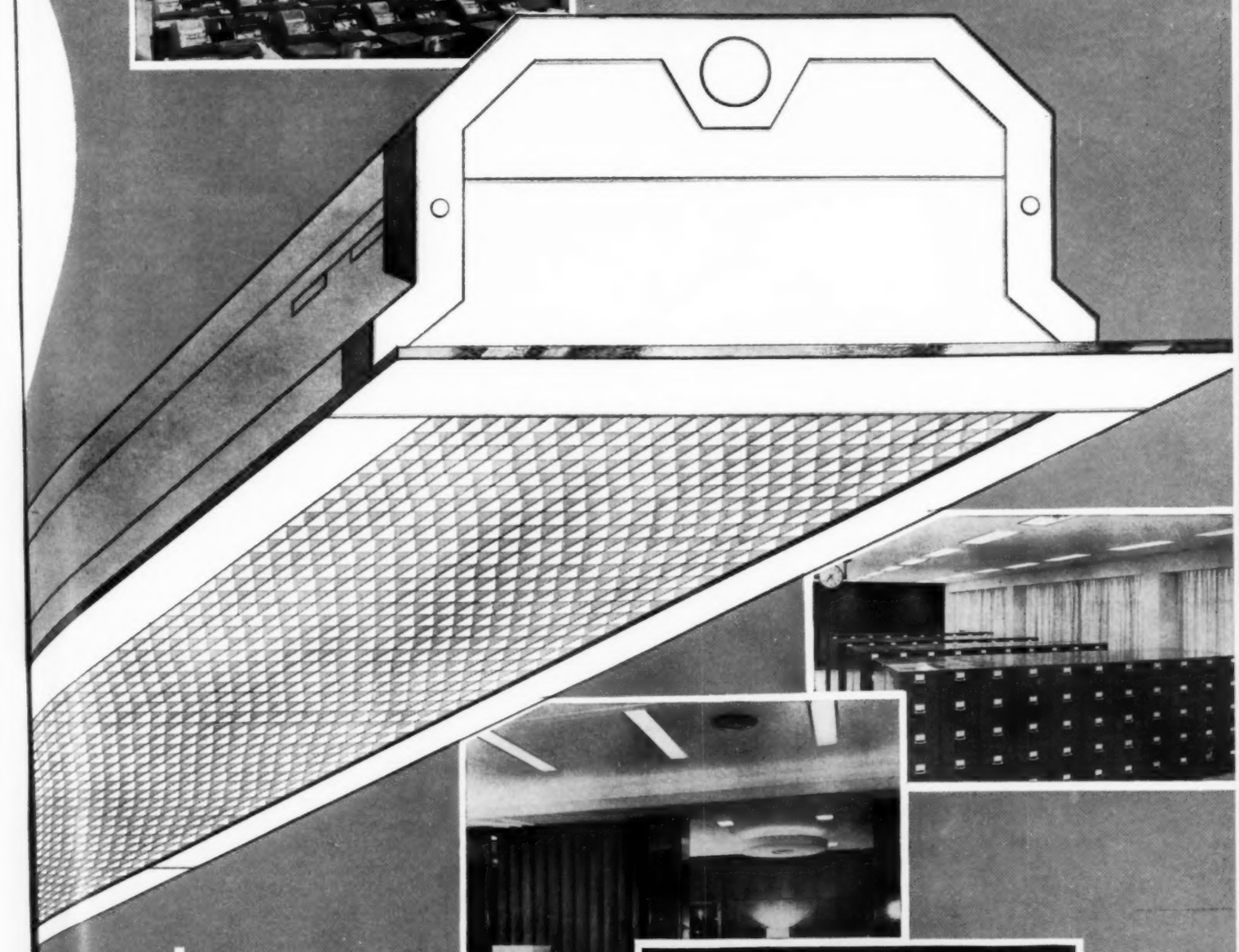
HAVEN-BUSCH COMPANY

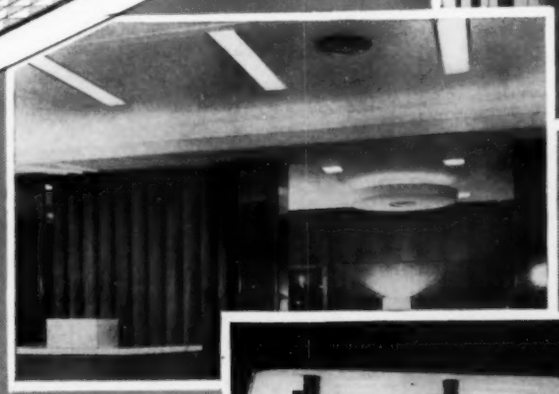
501 Front Ave., N. W. Phone 9-4173 Grand Rapids 4, Michigan

ANY BOTTOM YOU CAN NAME

Select the type that goes with your motif:

- **GRATELITE****, *the new Louver-Diffuser for functional beauty and low-brightness, "velvetized" light (shown below)*
- **PRISMATIC LENS**
- **GLOBOLITER**
- **CROSS BAFFLES**
- **ALBALITE GLASS**
- **CURVED PRISM LENS**
- **HINGED EGGCRATES**
- **OPEN TYPE**
- **FLUTEX GLASS**



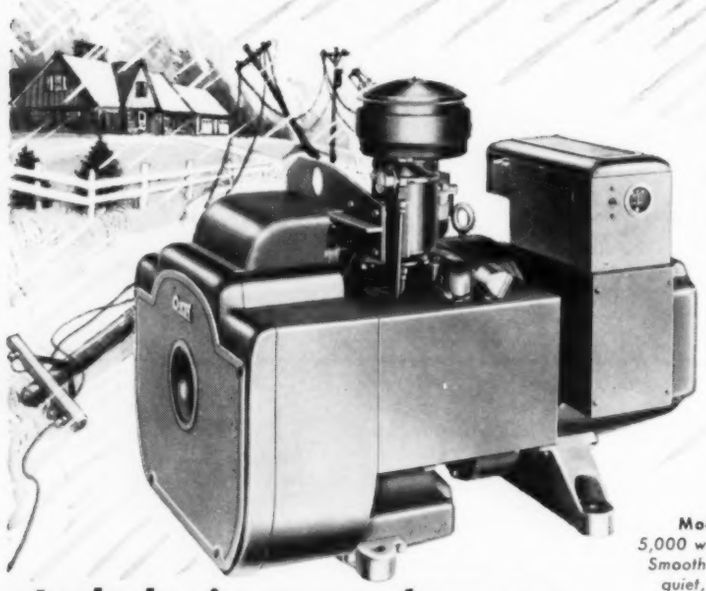


Installation Site:	Peninsular Life Insurance Co., Jacksonville, Fla.
Architects:	Kemp, Bunch & Jackson, Jacksonville, Fla.
Consulting Engineer:	K. M. Garth, Jacksonville, Fla.
Electrical Contractors:	Satchwell & Joseph Electrical Co., Jacksonville, Fla.
Electrical Distributor:	Leslie E. Porter, Porter Lighting, Inc., Jacksonville, Fla.

EDWIN F. GUTH COMPANY ST. LOUIS 3, MO.

Leaders in Lighting since 1902

Specify built-in protection against power interruptions



Model 5CW
5,000 watts A.C.
Smooth-running, quiet, compact

Include, in your plans, an ONAN *Emergency* Electric Plant

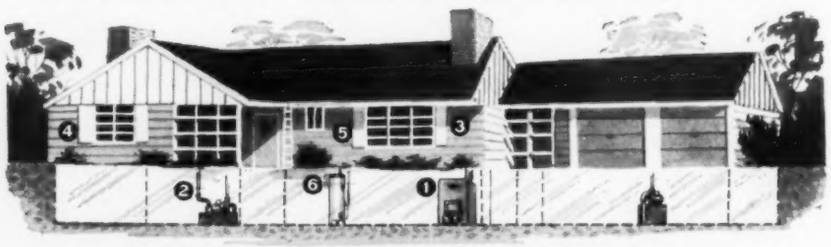
The homes you design become unlivable and even unsafe when storms, floods or other disasters interrupt electric power.

Suburban homes are especially vulnerable because of their complete dependence upon electricity. When power interruptions occur, these homes are without heat, water, refrigeration and lights. Freeze-ups and food spoilage can cause severe losses; fire hazards are increased.

You can insure the homes you design against power interruptions by specifying a low-cost Onan Emergency Electric Plant *in your plans.* When power interruptions occur, the Onan Electric Plant supplies regular 115-volt 60-cycle A.C. electricity for all essential uses *as long as the emergency exists.* Automatic controls start the Onan unit when power fails and stop it when power is restored; protect the home at night or when the family is away.

Very little space is required for installation in basement or garage. Hook-up to the wiring system is simple and inexpensive. Write today for folder describing Onan Standby Electric Plants, gasoline driven, 1,000 to 50,000 watts A.C. Helpful literature on installation and wiring is also available.

PROVIDES ELECTRIC POWER FOR THESE ESSENTIAL USES—



1. Automatic oil, gas or coal furnaces. 2. Electric water system. 3. Home freezer and refrigerator. 4. Lights, radio, etc. 5. Electric range (limited use). 6. Water heater.

Write for Standby Power Folder

D. W. ONAN & SONS INC.

Onan ELECTRIC PLANTS

7384 University Ave. S.E. • Minneapolis 14, Minnesota

THE RECORD REPORTS

CANADA

(*Continued from page 32*)

personnel of a newly opened army ordnance depot in Cobourg, Ont. The loan was granted under Section Nine of the National Housing Act, which provides for loans up to 90 per cent of the lending value of low-rental projects built by limited-dividend housing companies.

The development will include 16 two-bedroom units, 106 three-bedroom houses and 10 four-bedroom units for army personnel stationed at the Cobourg ordnance depot. Rents will be $54, $57 and $60 for the two-, three- and four-bedroom houses respectively.

Construction is to be undertaken immediately by Grisenthwaite Construction Company Ltd. of Hamilton, Ont.

NEWS NOTES

Building permit values for the first 11 months of 1953, according to a survey of nine leading Canadian cities by *The Financial Post*, were predicted to total $600 million, a 50 per cent rise over the total for the same period in 1952; the rising rate of commercial and industrial building accounted for much of the increase . . . And ***housing construction in 1953***, the Bureau of Statistics forecast, would exceed 100,000 starts, a record figure . . . ***November contract awards*** totaled $157,752,200 in 1953, an increase of 3 per cent over November 1952, according to MacLean Building Reports . . . ***Ernest Cormier,*** Montreal architect, was awarded the Archambault Medal at the 21st annual meeting of the French-Canadian Association for the Advancement of the Sciences . . . ***The Ottawa Chapter*** of the Ontario Association of Architects recently elected as their officers: Watson Balharrie — president; Eric Burgess — vice chairman; Wallace Sproule — treasurer; and Gordon Pritchard — secretary . . . ***The Royal Architectural Institute of Canada*** has scheduled its annual assembly for May 10–14, headquarters to be the Sheraton-Mount Royal Hotel in Montreal . . . ***Starting salaries for architects,*** reports *The Financial Post*, may run as high as $335 a month, or as low as $215, averaging $268; beginning civil engineers, on the other hand, average $297 a month, while all engineers average $287.

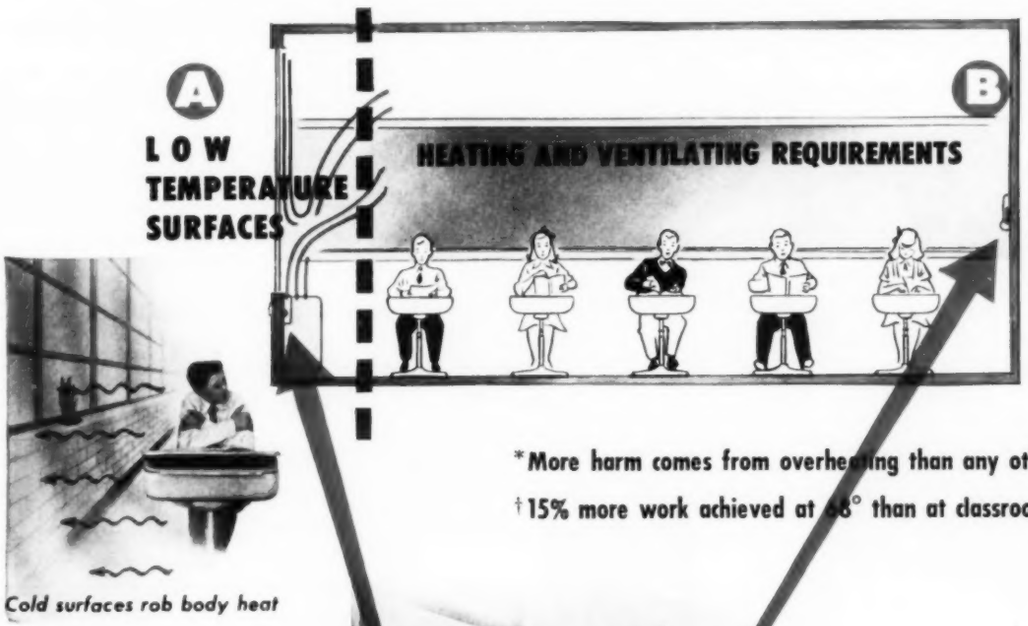
(*More news on page 38*)

A NEW STANDARD OF THERMAL COMFORT

PLUS REAL FUEL SAVINGS

through features found only in this

NESBITT SYSTEM

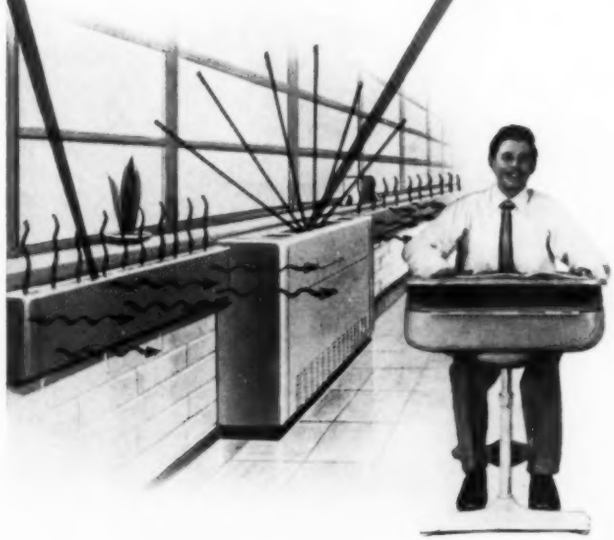


*More harm comes from overheating than any other cause.

†15% more work achieved at 68° than at classroom temperatures of 74°.

Cold surfaces rob body heat

A This radiation provides a heat *gain* to the body in the presence of cold wall and window surfaces. It does so for the full length of windows. It continues this protection against the discomfort of these cold surfaces even after the unit ventilator has satisfied the general heating requirements of the room. This no other system does. Moreover the warm convection heat currents flowing upward and over the cold surfaces completely eliminates downdraft.



B Room temperatures may often be 4 to 5 degrees lower when protection from the chilling effects of cold surfaces is provided. So frequently overheating is the result of an attempt to provide better thermal comfort by a higher ambient temperature whereas what is needed is not more total heat but heat at the right place. This is just what Nesbitt Wind-o-line does. This difference of 4 to 5 degrees also means a reduction of upward of 5% of your heating fuel cost.

*†Source—*Report of New York State Commission on Ventilation.*

This new standard of thermal comfort and these fuel savings are available to you now, but to get them you should insist on

NESBITT *Syncretizer* WITH WIND·O·LINE

MADE AND SOLD BY JOHN J. NESBITT, INC. PHILADELPHIA 36, PA.—SOLD ALSO BY AMERICAN BLOWER CORPORATION

 By Ernest Mickel

LEASE-PURCHASE BILL IS EARLY IN SENATE HOPPER

The lease-purchase bill so strongly desired by the General Services Administration as an answer to space shortage problems was made an early order of business with the Senate. On the first day of the second session of the 83rd Congress, Senator Knowland (R-Calif.) listed seven measures to be given early attention and the GSA bill was one of them.

No. 615 on the Senate calendar, S.2457 would authorize the GSA to enter into building purchase contracts with private contractors who would themselves construct the buildings. Private architects would design the government structures, and title would pass to Uncle Sam at the end of an amortization period during which the Federal government would make "rent" payments, avoiding the outlay of huge funds initially to get its new construction. The amortization time probably would be 25 years.

The legislation also would permit the Postmaster General to lease space for post office purposes.

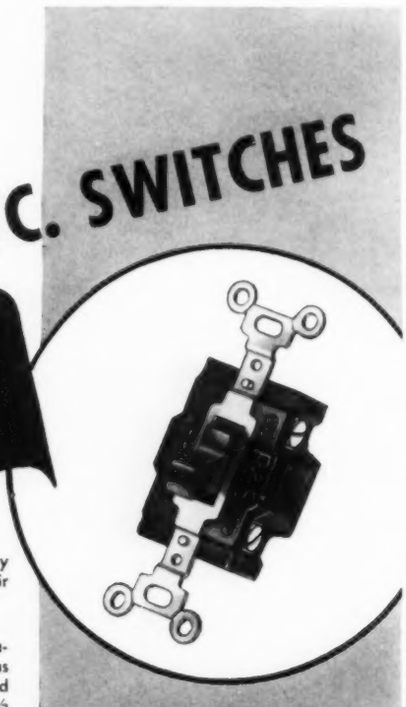
HOUSING REPORT IS GIVEN BOUQUETS AND BRICKBATS

Reactions to the report of the President's Advisory Committee on Government Housing Policies and Programs were numerous and varied. For the most part, even among the liberal elements in Congress, they were laudatory and hailed the document as signaling an im-

(Continued on page 280)

Specify P&S Super A.C. SWITCHES

For: Extra Long Life
at Full Rated Load
Maximum Service
Quiet Operation



P&S Super A.C. Switches are listed as approved by Underwriter's Laboratories, Inc. for use up to their full rated capacity for —

1. Fluorescent Lamp Loads. Up to full rated capacity at voltages from 120 to 277. Only half as many P&S Super Switches needed as compared with ordinary type that may be used only up to ½ rated capacity.

2. Inductive Loads. P&S Super A.C. Switches can be used up to 277 Volts at full rated capacity.

3. Incandescent Lamp Loads. P&S Super A.C. Switches can be used up to full rated capacity.

4. Motor Loads — P&S Super A.C. Switches can be used up to 277 Volts at 80% of current rating of switch.

AND WHAT'S MORE—P&S Super A.C. Switches are designed and manufactured to give you many times the performance of ordinary snap type switches.

Write now for complete information on this Revolutionary New Switch.

Department A

P & S Super A.C. Switches
15 and 20 Ampere Types
Single Pole, Double Pole, 3 Way
Sturdy Brown or Ivory Handles
Totally Enclosed
Large Head Binding Screws
May Be Mounted in Any Position
Back or Side Wiring

PASS & SEYMOUR, INC., SYRACUSE 9, N. Y.
OFFICES: 71 Murray Street, New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

COMMERCE OFFICIAL SAYS AIRPORT AID IS NOT DEAD

Contrary to rumor, the Federal aid to airports program is not a dead duck, according to Robert B. Murray Jr., Undersecretary of Commerce for Transportation, who told ARCHITECTURAL RECORD that while the program may continue on a "more restricted basis," no decision has been made to do away with it completely.

Commerce officials have been studying results of a survey in this field that took seven months to complete. Decisions will not be reflected in the fiscal 1955 budget now before Congress, but Civil Aeronautics Administration can be expected to ask for supplemental appropriations to carry the airports program forward, Mr. Murray indicated. The survey was conducted by an industry team representing all segments of the aviation industry.

Mr. Murray was willing to say that conclusions supported continuation of Federal financial assistance to communities constructing needed airports, but would not elaborate because he had not studied the report himself.

There has been a moratorium on funds for new projects in this program, Congress refusing to vote new money last year until the whole matter had been surveyed. The fiscal 1954 appropriations included $22.7 million to be used only for liquidation of contracts. Outlays as high as $100 million annually have been authorized by Congress.

who have specified Westinghouse Water Coolers

WESTINGHOUSE NOW ANNOUNCES ITS COMPLETELY NEW AND MODERN 1954 LINE

CHECK THESE FEATURES:

- **DUAL ELECTRIC CONTROL—FINGER-TIP PLUS TOE-TIP** . . . only Westinghouse provides the convenience of dual electric control at *no extra cost*...with electrically operated solenoid water valve that ends valve stem packing leaks and reduces wear and maintenance.

- **EXCLUSIVE SUPER SUB-COOLER AND PATENTED PRE-COOLER** . . . substantially increases cooling capacity and lowers operating cost by utilizing cold waste water to pre-cool both the incoming drinking water and the refrigerant.

- **AUTOMATIC STREAM-HEIGHT CONTROL** . . . automatic stream-height control is built into the bubbler assembly. Provides proper drinking stream; prevents squirt or dribble, regardless of normal variations in water pressure.

- **COMPACT, MODERN STYLING** . . . baked enamel in attractive silver-grey hammertone finish. New escutcheon, stainless steel top. Occupies only 14″ x 14″ of floor space.

- **5-YEAR GUARANTEE PLAN** . . . on the entire Hermetically-Sealed Refrigeration System.

THE WESTINGHOUSE PAY-WAY PLAN CAN SAVE HUNDREDS OF PAYROLL $

See how the new Pay-Way Computer proves that proper water cooler installations more than pay for themselves through payroll savings. Check us for details on how this Pay-Way Plan may help accomplish this result.

YOU CAN BE SURE...IF IT'S Westinghouse

Westinghouse Electric Corporation • Electric Appliance Division • Springfield 2, Mass.

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
1950	256.2	254.5	249.5	251.5	248.0
1951	273.2	271.3	263.7	265.2	262.2
1952	278.2	274.8	271.9	274.9	271.8
Sept. 1953	284.7	279.2	288.5	295.3	291.3
Oct. 1953	283.0	277.3	288.0	295.0	290.8
Nov. 1953	283.2	277.5	288.3	295.2	291.0
	% increase over 1939				
Nov. 1953	129.3	126.7	120.6	121.3	123.7

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs.	Commercial and Factory Bldgs.	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
1950	194.3	196.2	185.4	183.7	185.0
1951	212.8	214.6	204.2	202.8	205.0
1952	218.8	221.0	212.8	210.1	214.3
Sept. 1953	225.6	226.5	225.8	226.8	227.0
Oct. 1953	224.9	225.6	225.7	226.7	226.8
Nov. 1953	225.1	225.8	226.0	226.9	227.0
	% increase over 1939				
Nov. 1953	160.8	171.7	137.6	133.0	139.7

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
1950	232.8	230.7	221.9	225.3	222.8
1951	252.0	248.3	238.5	240.9	239.0
1952	259.1	253.2	249.7	255.0	249.6
Sept. 1953	266.8	261.0	262.2	270.8	264.0
Oct. 1953	265.4	259.2	261.9	270.6	263.6
Nov. 1953	266.4	260.0	263.3	272.0	264.8
	% increase over 1939				
Nov. 1953	141.7	143.0	121.8	127.0	122.5

SAN FRANCISCO

1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
1950	227.0	223.1	222.4	224.5	222.6
1951	245.2	240.4	239.6	243.1	243.1
1952	250.2	245.0	245.6	248.7	249.6
Sept. 1953	258.7	251.3	263.8	270.7	266.1
Oct. 1953	258.7	251.3	263.8	270.7	266.1
Nov. 1953	257.9	250.1	264.3	271.1	266.3
	% increase over 1939				
Nov. 1953	144.2	151.9	125.1	122.4	128.6

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

Passenger Elevators

For architectural beauty, construction economy, low operating costs

No penthouse or heavy sidewalls needed

There are several very good reasons why Oildraulic Passenger Elevators are the most practical and economical type to specify within their ranges of travel and speed.

Architectural advantages

The elevator car and its load are supported by the hydraulic system—not the building structure. This makes unnecessary the costly, unsightly penthouse that interferes with modern architectural design. It also permits a substantially lighter shaftway structure. Rotary's compact electric power unit can be located in any convenient spot on any landing, or placed in an area with other mechanical equipment.

Operational advantages

The revolutionary Rota-Flow power system guarantees quiet, efficient operation and low operating costs. Because of simple design and construction, maintenance on an Oildraulic Elevator is also remarkably inexpensive.

Through the use of hydraulically operated control system (electrically actuated) and automatic leveling, smooth starts and stops and accurate landings are guaranteed. Automatic leveling is standard equipment on all Rotary Passenger Elevators, and costs less than automatic leveling on other types of elevators.

Coast-to-coast service

With over 75,000 Oildraulic Elevators and Lifts now in use, Rotary offers the most complete service in the oil-hydraulic elevator field. Look under "ELEVATORS" in your Classified Phone Directory or write us for the name and address of our distributor near you. They will gladly assist you on elevator plans and specifications.

Rotary®

Oildraulic Passenger Elevators

Write for new Catalog RE-307

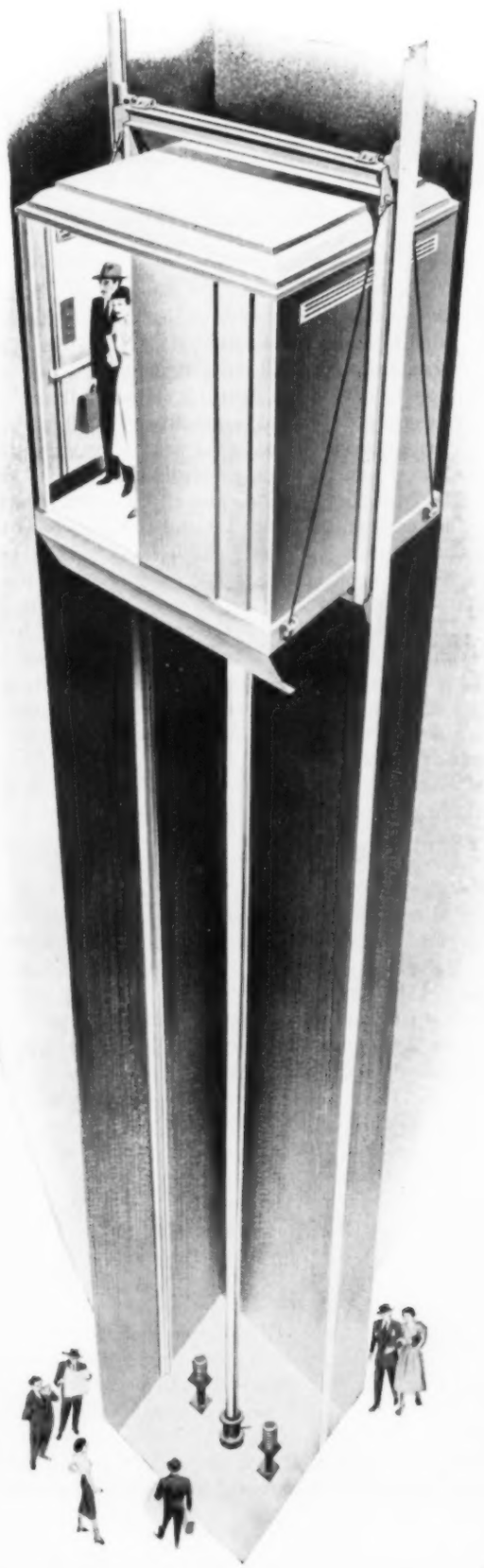
It's the most complete and helpful booklet ever issued on oil-hydraulic elevators for passenger service.

See our catalog in Sweet's Files

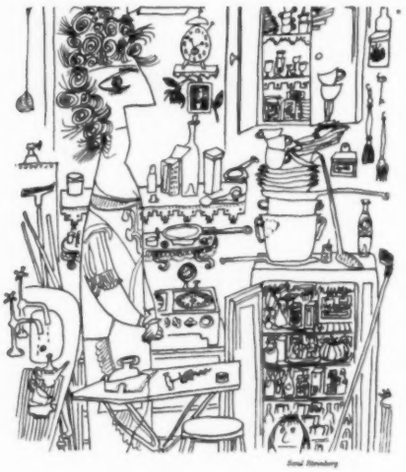
ROTARY LIFT CO.

1017 Kentucky, Memphis 2, Tenn.

Specialists in modern oil-hydraulic elevators



REQUIRED READING



ARCHITECTS DESIGN HOUSES

The House and the Art of Its Design. By Robert Woods Kennedy. Reinhold Publishing Corp. (330 W. 42 St., New York, N. Y.) 1953. 6¼ by 9 in. 550 pp., illus.

Reviewed By JOHN HANCOCK CALLENDER A.I.A.

HERE IS A BOOK ABOUT HOUSES that is intended to be read, not looked at. It is a serious and thoughtful book, running to more than 500 pages. Lest this statement cause undue alarm in a profession reputedly unsympathetic to the written word, it should be quickly added that the book is good reading. The author has a keen mind, a sharp tongue, and a fine command of the English language. His book is always interesting, often amusing, never dull.

Mr. Kennedy's subject is the custom-designed single-family house. In defining his subject, the author explains that architects design houses, whereas speculative builders offer "homes," and public housers produce "dwelling units." Of these, only the house offers the architect a real opportunity for creative design.

Who are the clients of the architects who design houses? In a brief sociological excursion, the author comes to the conclusion that the "upper-middle" is the principal house-building class, and that within that class there is an innovating group who want modern houses. These are the clients and Mr. Kennedy has a high regard for them. The ideal client plays a positive role in the creation of a house. He must not only be capable of thinking out his own living problems, but he must have a definite desire for, and a sensitive appreciation of beauty in architecture.

Having identified the client as a class, the author steps up for a closer look. Each member of the family — wife, husband, baby, small child, school child, teen-ager, grandparent, servant — is described in detail and his special living needs are noted. Then the family as a group is considered, its internal organization and activities, and its relations with outsiders. Mr. Kennedy finds that modern houses are built by equalitarian, not authoritarian, families. Families in the class we are here concerned with have few if any servants. They therefore want every mechanical and planning device that the architect can provide which will reduce housework. The housewife wants to spend less time on housework in order to spend more time on child care.

The planning of the house is discussed intelligently and in detail. Zoning of the various activities according to the degree of privacy required will make for improved livability. The author takes a dim view of the open plan which he finds to be noisy, disorderly and lacking in privacy. He concludes that there is much to be said for the old fashioned parlor. The living-kitchen also appeals strongly to him; "fireplaces, flowers, children, dogs and husbands also belong in the kitchen." Large entries, wide corridors ("circulation pieces" the author calls them) and big bathrooms are advocated for many reasons, practical as well as spiritual. Mr. Kennedy is also fond of wide doors (four or five ft) which, like a fat man, connote jollity and hospitality. The importance of adequate and properly designed storage space is pointed up by some 20 pages of checklists of items to be stored.

Architect-client relations and the designing and building process are described in detail. The "professional hierarchy," and "clients, ideal and otherwise," are appraised with wit and candor. The ideal architect keeps equidistant from the three poles of architectural practice — design, structure and business — but inevitably every architect gravitates toward one or another of these poles, according to his own predilections.

Whether to give the client the house he wants or the house he can pay for, is a problem familiar to all architects in this field. Several courses of action are suggested for handling this and other difficult points in the architect-client relation. The author, unlike many architects, believes that clients have some rights. He considers it one of the duties of the architect to try to give adequate expression to the client's ideas, as well as his own. (Are you listening, Messers Wright, van der Rohe, et al.?)

A good third of the book is devoted to what might be called a theory of house architecture. The effect of structure, mechanical equipment, site, and neighborhood on the design of the house is noted and the whole subject of expression and style is discussed at length. Mr. Kennedy proves himself an able theoretician and a keen critic. He discusses the three main styles of the day under the labels Traditional, Empirical and International. This is summarized in a caustic and hilarious table titled "the Art of Freezing Music." Although the author is forced, somewhat reluctantly, to classify himself as an Empiricist, he has not allowed this to affect his critical judgment, and he is as severe with the Empiricists as with the Internationalists.

Not the least of the pleasures offered by this book is its distinct New England flavor. There are no patios, lanais, barbecues or swimming pools here. But rain, mud, snow and nor'easters are present, if only by implication. Many chapters start with a quotation from Thoreau, that arch-New Englander who was both anti-social and anti-architectural. And the expression "neating up" must surely be from New England.

Some feel that the battle between Modern and Traditional is pretty well

Continued on page 342

More books on page 48

INSULATED METAL WALLS

for INDUSTRIAL and COMMERCIAL BUILDINGS

ALUMINUM, STAINLESS or GALVANIZED STEEL

FLUSH, RIBBED, or FLUTED
Over-all "U" Factor of Various Types is Equivalent to or Better than Conventional 16" Masonry Wall

Here is another completely new industrial plant constructed with Insulated Metal Walls . . . both plant and powerhouse have aluminum exteriors. From north to south, and across the country, the trend in industrial and commercial building is to this modern, light weight construction. Apart from design effects obtainable, and the over-all appearance of such structures, both architects and owners are quick to recognize the important economies in lower material cost, lower labor cost, and the accumulative advantages of reduced construction time resulting from rapid erection—even in sub-zero weather. Buildings can be quickly enclosed with insulated metal walls under low temperature conditions which would preclude masonry construction. Mahon Insulated Metal Walls are available in the three exterior patterns shown at left. The Mahon "Field Constructed" Fluted or Ribbed Wall can be erected up to sixty feet in height without a horizontal joint—a feature of Mahon walls which is particularly desirable in powerhouses or other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for information, or write for Catalog No. B-54-B.

THE R. C. MAHON COMPANY

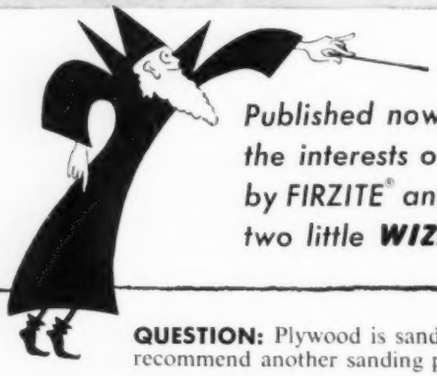
Detroit 34, Mich. • Chicago 4, Ill. • Representatives in All Principal Cities

Manufacturers of Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms; Rolling Steel Doors, Grilles and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

Illustrated here is the Ford Motor Company's Plant, Kansas City, Mo. 225,000 Sq. Ft. of Mahon Insulated Metal Walls, with Aluminum exterior plates, and 1,070,000 Sq. Ft. of Mahon Steel Roof Deck were employed in the construction of this ultramodern plant. Giffels & Vallet, Inc., L. Rossetti, Architects and Engineers. Long-Turner Construction Co., General Contractors.

MAHON

The Architect's Question Box



Published now and then in the interests of wood finishing by FIRZITE® and SATINLAC®, those two little ***WIZARDS*** *with* ***WOOD.***

QUESTION: Plywood is sanded in the mill—why do you recommend another sanding prior to finishing?

ANSWER: Sanding removes finger and dust marks as well as any grain-raising caused by moisture. Poorly sanded or unsanded sections will cause a spotty or irregular finish.

QUESTION: Why does White FIRZITE produce such beautiful Pickled and Blond effects?

ANSWER: The special formulation of White Firzite penetrates deep down into the pores of the wood. The grain of the wood is not obscured and a beautiful "Woodsy" effect results, as distinguished from a "painty-looking" job.

QUESTION: Can SATINLAC be used over silex paste wood fillers?

ANSWER: Yes. Being water-clear in color, SATINLAC produces an excellent clear finish when used over paste wood fillers. It is important that the filler be wiped clean and allowed to dry at least 24 hours before the SATINLAC is applied.

QUESTION: To obtain light pastel and gray shades on Blond and Pickled effects, what is used to tint White FIRZITE?

ANSWER: Colors-in-oil should be used to tint White FIRZITE.

If you have any other problems on wood finishing let us help you. Write also for specifications.

May we send you a blond Birch panel showing SATINLAC finish?

UNITED STATES PLYWOOD CORPORATION

Dept. 297, 55 West 44th Street, New York, N. Y.

REQUIRED READING

COMMERCIAL BUILDINGS

Commercial Buildings. By the Editors of ARCHITECTURAL RECORD. *F. W. Dodge Corp. (119 W. 40 St. New York, N. Y.) 1954. 8¾ by 11⅝ in. 408 pp. illus.*

By DANIEL SCHWARTZMAN A.I.A.

A SUMMING UP, after five years of intensive commercial building activity, is certainly in order. This has been done thoroughly and interestingly in the book, *Commercial Buildings*, a collection of some of the best recent examples, all originally published in ARCHITECTURAL RECORD.

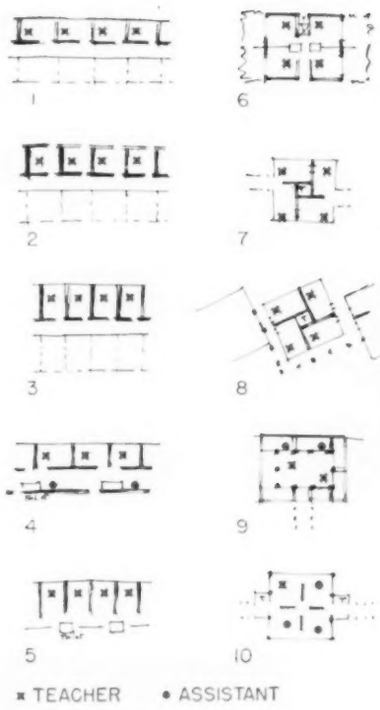
We would all agree with the position of prominence given in the first section "Office Buildings" to Pittsburgh's Alcoa Building, designed by Harrison and Abramovitz, and to New York's Lever House, designed by Skidmore, Owings and Merrill, as representing the two most significant innovations in office building design of the era. Certainly the metal skin and the exposed rib and glass treatments that reached their fruition in these two designs are destined to continue to influence the designers of the more speculative office building structures for some time to come. It is certainly valuable to have the analysis of these two innovations so fully covered, side by side.

It would have been a further convenience to see immediately following, the very thoughtful and flattering analysis by Frederic Cutheim of the Philadelphia Savings Fund Society Building, designed by Howe and Lescaze, which was by all odds the most significant office building design of its era. The editors chose to keep this very informative article at the back of the book in the section devoted to "Banks" where it is not so valuable for purposes of comparison.

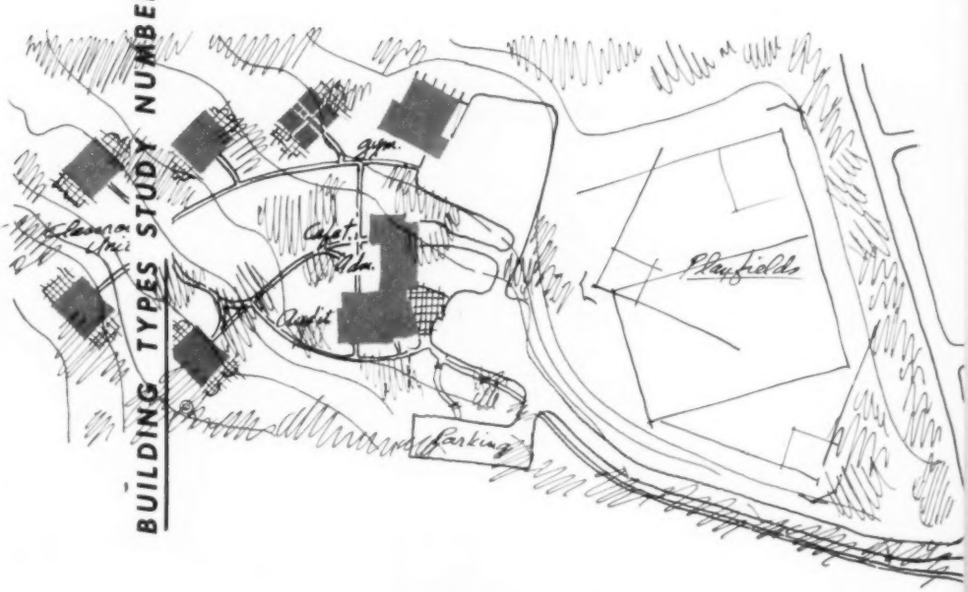
It takes a comprehensive collection of recent work such as that included in "Small Office Buildings" to point up the fact that recent contemporary design is settling down to a solid style that might be read in the future as unmistakably belonging to this decade — or has inventiveness begun to run out and monotony begin to set in? Here is an excellent opportunity to judge for yourself!

The technical background of these

(*Continued on page 346*)



BUILDING TYPES STUDY NUMBER 207



Schools

BY NOW SOME SCHOOL PROBLEMS are obvious to many of us — not, of course, that all agree on their solutions. Other problems, apparent to a few but no less real, can become sources of greater eventual difficulty. We know that enrollments are increasing, which drains more money from nearly every community's pocketbook. To judge by many recent buildings, some architects and school administrators are finding humanity in architectural expression important; and to reconcile dollars, esthetics, sound construction and suitability to a changing educational philosophy is an ever more fierce struggle. There is a growing teacher shortage due to both increasing need and low wage rates; this may seem hardly an architectural problem, but architects, collaborating with educators, have begun to attack it, as the sketches above show.

Some day we may all realize that our new schools can cause older ones to become quickly obsolete; or that schools cannot be planned and built singly. A school system can function better and cost less if it is all programmed at once, relative to its total community, though it may be built piecemeal. Frederick Gutheim, Director, Univ. of Michigan-Phoenix School Study Project, aired these subjects in a speech at M. I. T. in mid-1953. In the following pages two architects exhaustively compare several of their own schools; a third presents his work as administrators see it; another's work demonstrates the advantages of total planning.

— Frank G. Lopez

Sketches, top of page: 1, 2, 3, conventional classrooms, 4, 5, multi-use corridors (Walter Bogner; Eberle Smith; other architects), 6, 7, 8, four-classroom cottages, perhaps with some "assistants" (Lyles, Bissett, Carlisle & Wolf; Caudill, Rowlett, Scott & Assoc.; others), 9, unit for multi-class "core" curriculum, possibly certificated teachers plus assistants (McLeod & Ferrara), 10, cottage, one teacher, three assistants (attributed to Donald Barthelme). Right, cottages in a Connecticut campus plan (Warren Ashley, Archt.)

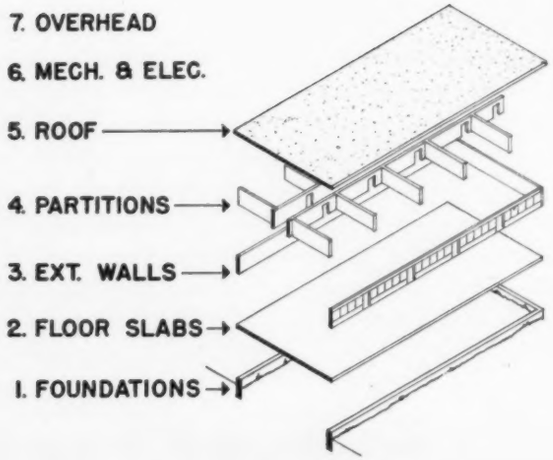
A Comparative Analysis of Three

by ALONZO J. HARRIMAN

THIS ARTICLE follows two others by the same author*; in those, costs were developed for certain types of construction (types of wall, roof, etc.) and the effect of varying the width of the classroom block, keeping other factors constant, was analyzed. The previous studies dealt with a theoretical school building. In contrast, we here compare three elementary schools actually built, within a year and a half of each other, within a 75-mile radius, by contractors fully conversant with any construction practices peculiar to the state of Maine. The three schools are comparable in many respects: all have kindergartens, multi-purpose rooms, kitchens (multi-purpose rooms are also cafeterias), administrative areas, individual exits from all classrooms, similar heating systems, etc. However, in the approach to design and in ultimate realization they are utterly different from each other. The method of comparison developed in the following pages, though it may not be directly useful for other climatic conditions or types of buildings, is based on an architectural concept which can help us understand why building costs vary.

* "*Cost Study of School Plan Types*," *AR March '49*; "*School Planning and School Costs*," *April '49*.

Alonzo J. Harriman, Inc.,
Architects-Engineers



SKOWHEGAN, MAINE, ELEMENTARY SCHOOL (2K-8-MP) is on an almost level, sandy lot in a residential section. The lot is quite small, so (contrary to usual practice) the wood-framed school was designed *not* to be expanded. It is complete in itself; kindergartens close the normally open end. Natural redwood, brick, white or gray trim, doors vividly color-accented, cornices and other visual elements keep it in neighborhood scale and fit it into the surrounding bungalow environment. Interior materials and planting areas, and the irregular perimeter, also express the residential design approach.

Maine Schools

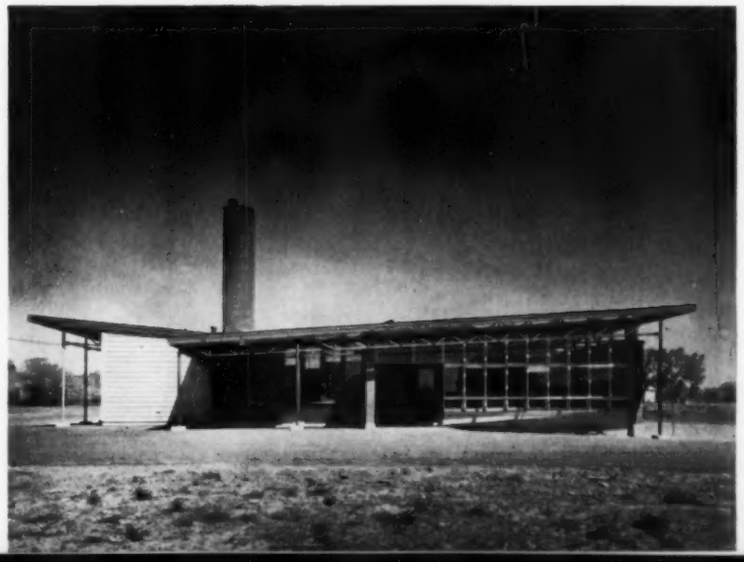
BAR HARBOR, MAINE, ELEMENTARY SCHOOL, considerably larger (2K-12-MP) than the other two, was perhaps a more challenging design problem. Devastating forest fires on Mt. Desert Island in 1947 revealed many beautiful views; to relate the building well to the site's natural beauties required endless study. The multi-purpose room's laminated wood arches; wood trusses over the classroom wing, which ingeniously suspend a clerestory that admits light and views of trees into the interior corridor; throughout the building a door-height dado of vertical pine siding, chosen as being more woody than birch plywood; and light, fixed wood exterior glazing units, all make *wood* the word for Bar Harbor.

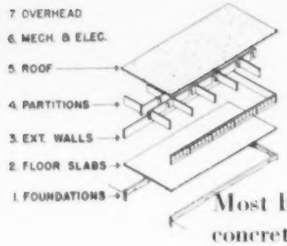
COMPARATIVE DATA ON THREE SCHOOLS

	SKOWHEGAN	BAR HARBOR	BREWER
Date Built	1952–53	1952–53	1951–52
Cost	$164,770	$289,164	$195,120
Area (sq ft)	16,000	24,900	16,680
Outside Wall (lin. ft)	730	1106	600
Interior Partition (lin. ft)	1000	1500	1150
Ratio Outside Wall to Area	22	23.4	28
Cost per sq ft	$10.30	$11.60	$11.70
Number Classrooms	2K-8-MP	2K-12-MP	K-11-MP
Cost per Classroom	$16,470	$20,600	$16,300
Area per Pupil (sq ft)	45	56.5	45
Cost per Pupil	$550	$660	$530
Date when School Went to Bid	Aug. '52	Jan. '52	Apr '51

Joseph W. Molitor

WASHINGTON ST. SCHOOL, BREWER, MAINE (K-11-MP) expresses a totally different design philosophy. Brewer is the "machine," the production-line building, with rigid steel frames, masonry spine, glass and cement-asbestos board skin; uniform in section and ready for additions at any time. Only at the entrance is the repetitive pattern broken. The exterior is painted light and very dark gray with doors a brilliant red. Frankly a machine-age product, the school arouses positive like or dislike in all who view it.





METHOD OF ANALYSIS—1: SITE AND FOUNDATION

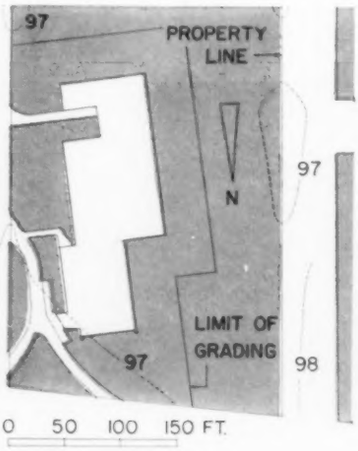
Most building cost analyses deal with units of material or trade — cubic yards of concrete or square feet of wall coverage — at so many dollars and cents each; here we attempt to use a more architectural concept, more expressive of the relationship of site, climate and other postulates to the design process. The diagram (left) and chart (bottom) indicate this approach. We have taken all costs of the site and its preparation (clearing, stripping top soil, sewer and water connections, excavation, rock removal, form materials, concrete and steel in footings and foundations, gravel fill to receive floor slabs — all work and material to bring the structure to the bottom of the floor slab) into one unit. All floor costs from the underside of the slab to the wax on the asphalt tile become another unit. Again, the exterior wall unit comprises structure, glazing, doors, hardware, masonry, millwork, painting, shades, under-window shelves and casework. Interior partition and roof units are similarly composed. These five complete the shell by architectural (rather than estimator's) stages. The sixth, important in the Maine climate, contains costs of all the means of achieving the desired controlled environment (heating, ventilation, lighting, etc.) plus cost of the chimney. Overhead includes insurance, supervision and other business costs charged to the building.

SKOWHEGAN site and foundation cost: $1.16 per sq ft of building floor area. Land is level, sandy, well drained, without any complicating conditions whatever; might be called the ideal situation.

BAR HARBOR site and foundation tell a different story: $1.76 per sq ft. There was much ledge rock at varying elevations. Although at Skowhegan, site work alone cost $254 or 2¢ per sq ft of building, at Bar Harbor it cost $7325 or 29¢. Rock accounted for $5000 of this. Foundation forms cost $5100 or 32¢ at Skowhegan; Bar Harbor forms, carried to and formed to ledge, cost 50¢. Items less influenced by the nature of the site showed less variation; concrete itself cost 23¢ at Skowhegan, 25¢ at Bar Harbor.

BREWER site and foundation, surprisingly, cost as much as Bar Harbor: $1.76 per sq ft. Analysis revealed that the lot, though level, was quite wet, requiring extensive fill to assure proper drainage; this accounted for 27¢. Another major fact was the heating trench, about 4 ft square, along two sides of the building. Expensive in itself, the trench also increased heating cost, due partly to difficult pipe-fitting.

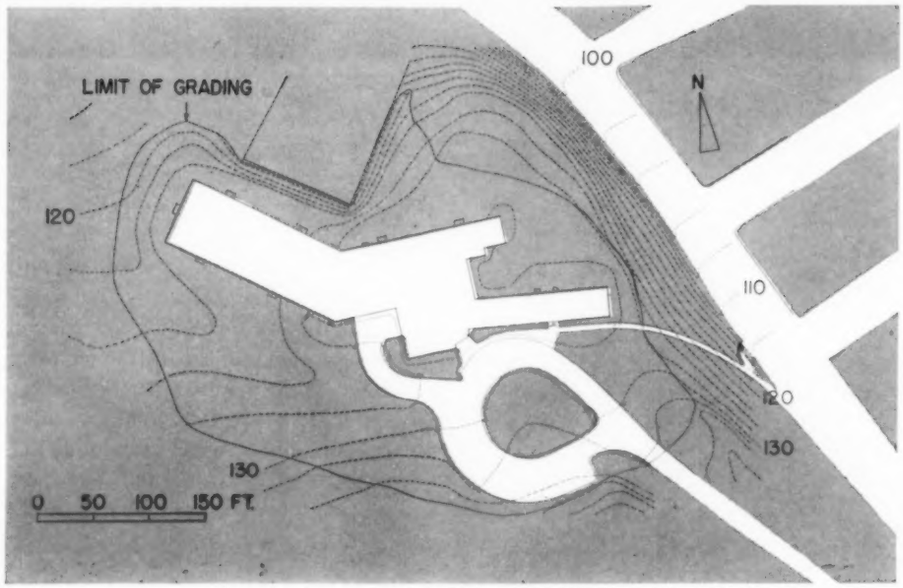
SKOWHEGAN



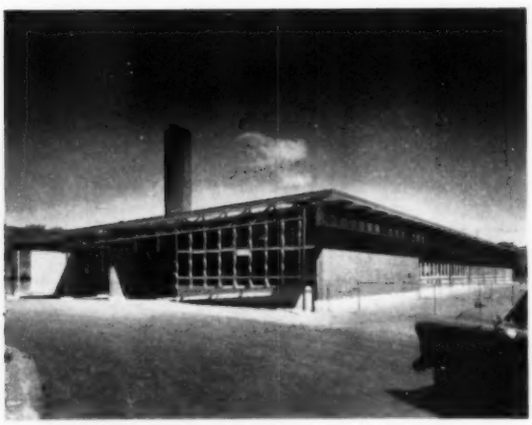
COMPARATIVE UNIT COSTS

UNIT	SKOWHEGAN		BAR HARBOR		BREWER	
1. Foundation and Site	$1.16	11.3%	$1.76	15.2%	$1.76	15%
2. Floor	0.61	5.9%	0.63	5.4%	0.59	5%
3. Exterior Wall	1.55	15.5%	1.53	13.2%	2.26	20%
4. Interior Partition	1.58	15.5%	1.65	14.2%	1.63	14%
5. Roof	1.91	18.5%	2.04	17.6%	1.42	12.1%
6. Mechanical, Electrical	2.80	27.5%	3.15	27.2%	3.36	28%
7. Overhead	0.72	7%	0.80	6.9%	0.68	6%

Note: All costs are expressed in dollars per sq ft of building area and in percent of total cost of the building. Admittedly, this analysis may not be as universally applicable as more conventional methods. For example, it is assumed that various components of any unit are roughly proportional between different schools.

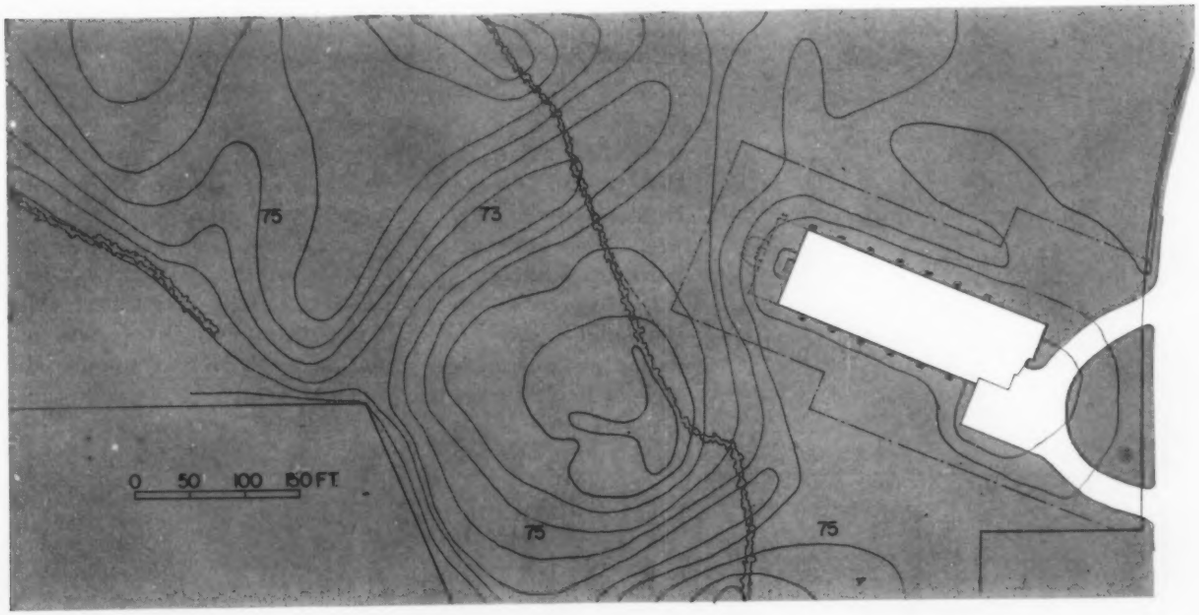


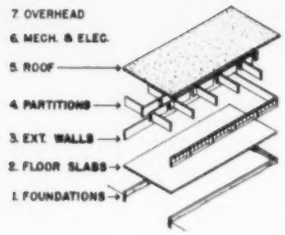
BAR HARBOR



BREWER

Joseph W. Molitor



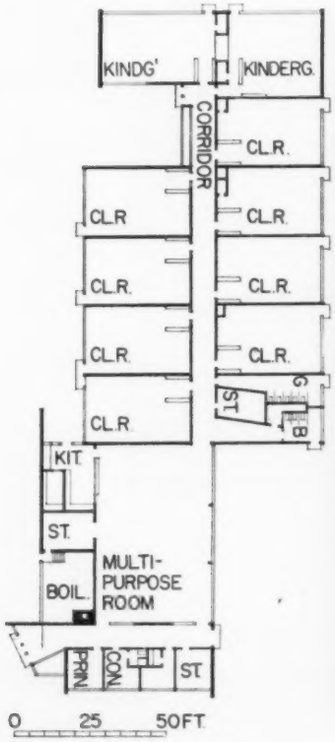


COMPARATIVE ANALYSIS — 2: FLOORS

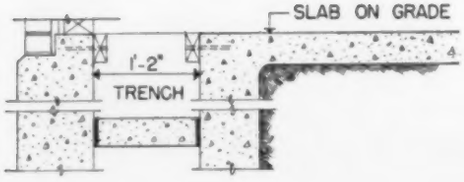
The second unit to be analyzed — floors — shows little variation. This was expected, since in all three school floors are concrete slab on fill, the floors of the gang toilets are all finished in ceramic tile, and most other floors have asphalt tile surfacing (except in such areas as boiler rooms). So any substantial variation in this unit would be unreasonable. If any of the buildings had contained radically different proportions of these individual items, for instance, areas of floor supported on frame construction, or ceramic-tiled corridors, the variation would of course have been greater. Floor costs range from 5.5 percent to 6.5 percent of total costs, actual unit figures being: Skowhegan, 61¢; Bar Harbor, 63¢; Brewer, 59¢.

The variation in plan layout visible in the three plans shown

SKOWHEGAN

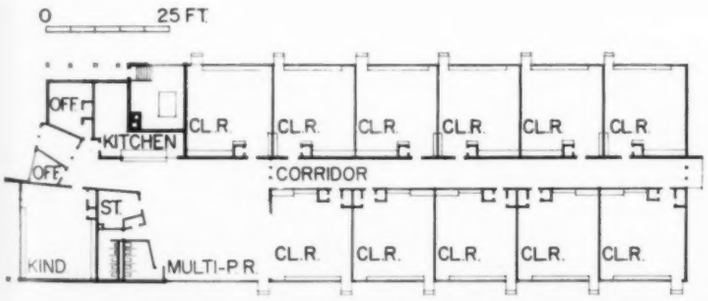


here, while it had little effect on floor costs — except possibly in that the Brewer school's regularity compared to the more irregular outline and greater perimeter of the others — did somewhat affect other unit costs, as subsequent analysis of interior partitions will show. This is, again, a reminder that the simple sum of the components is not necessarily a true whole. At left is a detail showing the junction of floor, piping trench and foundation used in the Brewer school and referred to on the preceding page as well as, later, under mechanical costs.



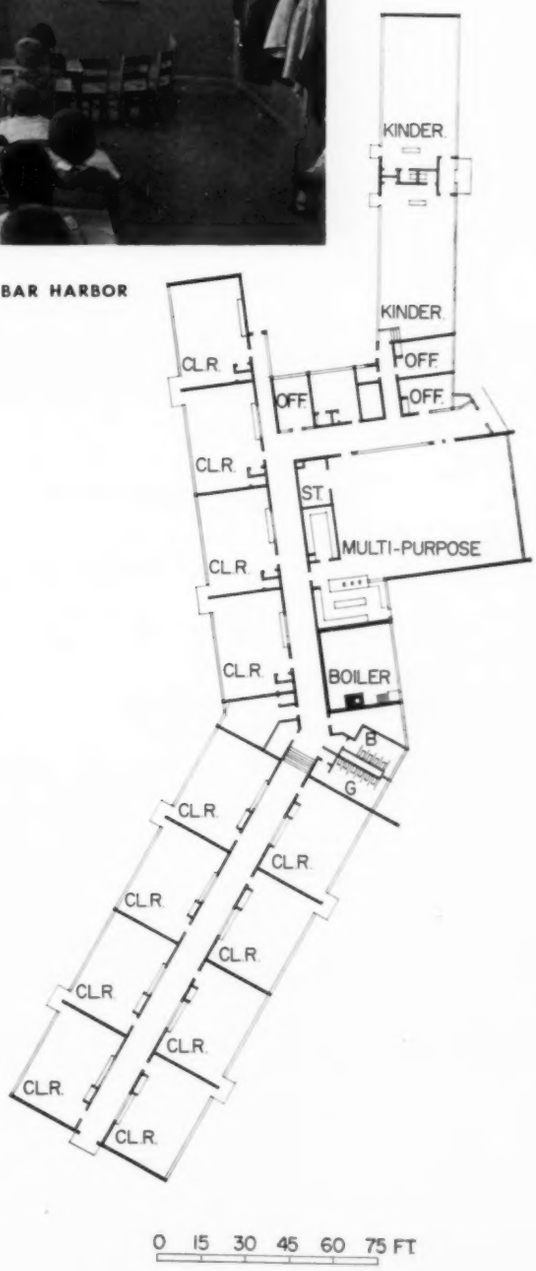
Classrooms in all three schools are roughly comparable in type and quality of space, lighting, heating, ventilation, and built-in equipment; yet the small site and desire for residential exterior scale at Skowhegan led to use of end-on classrooms; parallel layout at Bar Harbor complemented the wood-trussed roof; Brewer has square classrooms

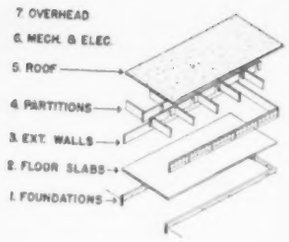
BREWER

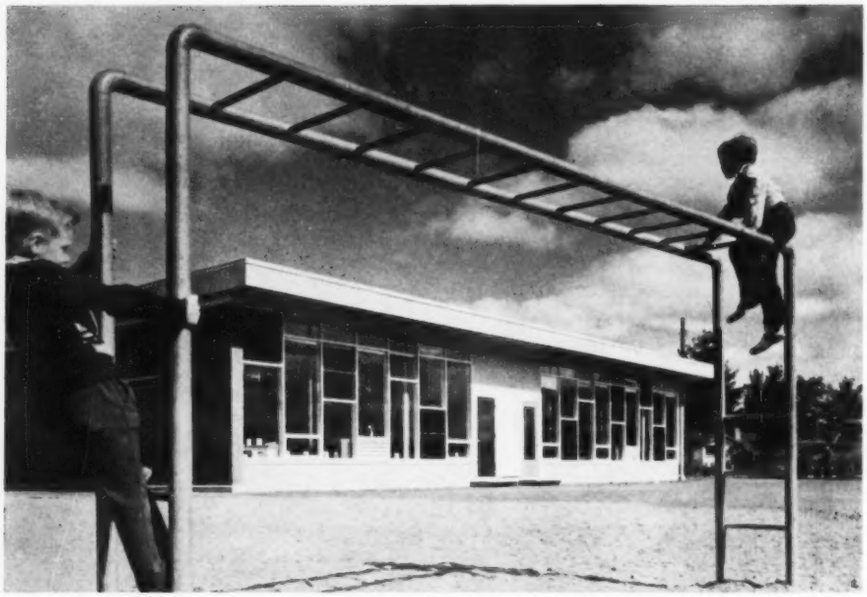


Joseph W. Molitor

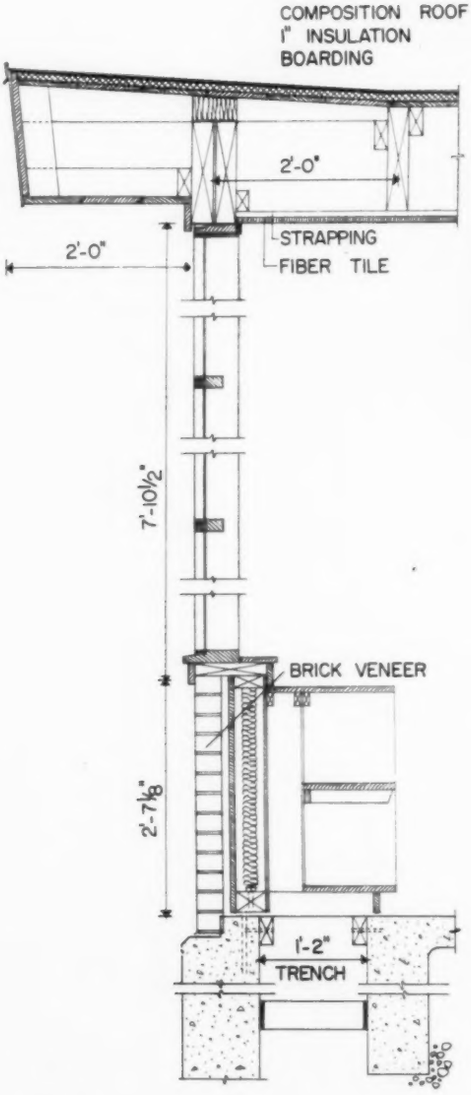
BAR HARBOR







SKOWHEGAN

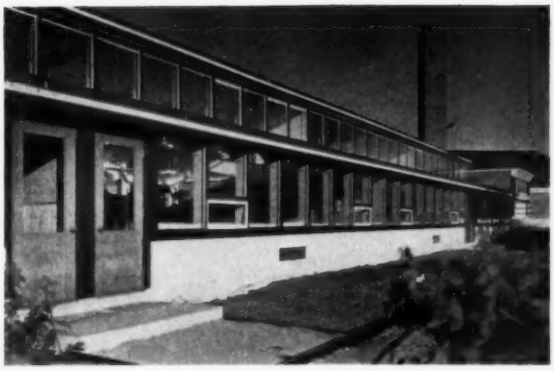


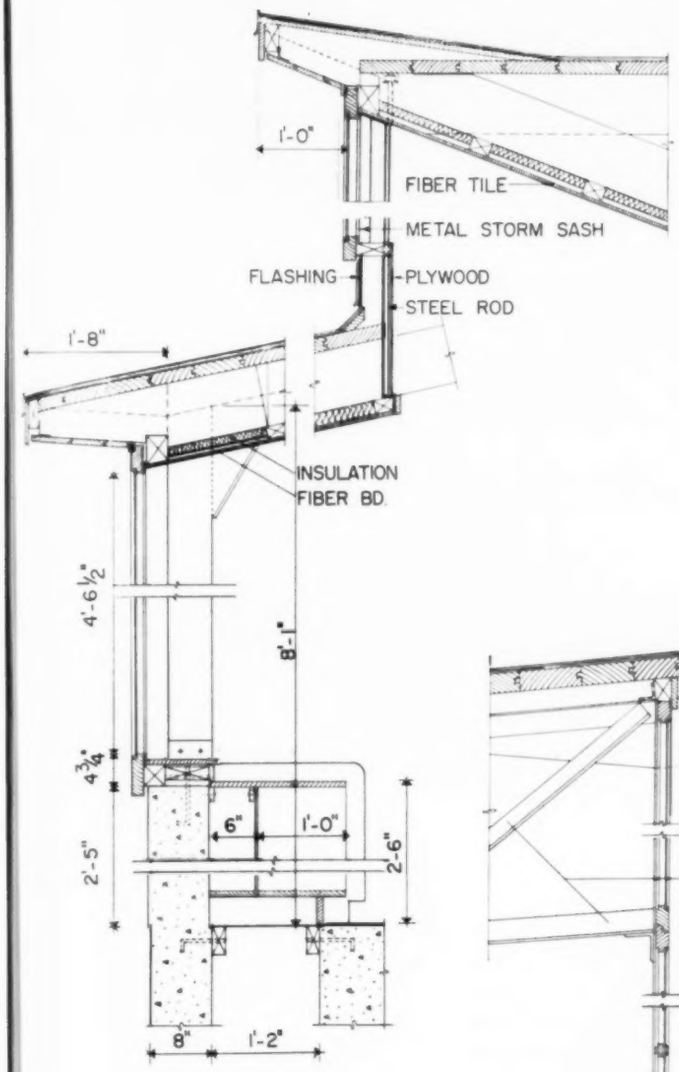
COMPARATIVE ANALYSIS — 3: EXTERIOR WALLS

This unit again shows a wide variation due naturally to the quite different concept and construction. Costs (still per sq ft of building area) are: Skowhegan, $1.55; Bar Harbor, $1.53; Brewer, $2.26 — nearly a 48 per cent range. Taking Bar Harbor (the smallest) as a base, the items of wall framing, concrete to the window sill and brick amount to 25¢; in Skowhegan framing and wall masonry total 46¢. Except for higher millwork and glazing costs at Bar Harbor (due to the clerestory), other exterior wall costs for these two schools are about the same. In other words, the comparatively expensive Bar Harbor clerestory has been offset by an economical wall below the windows; while at Skowhegan costly brick veneer up to the windows is paired with inexpensive wood framing above the sill. Both types of wall, in the proportion used in these two instances, cost roughly the same.

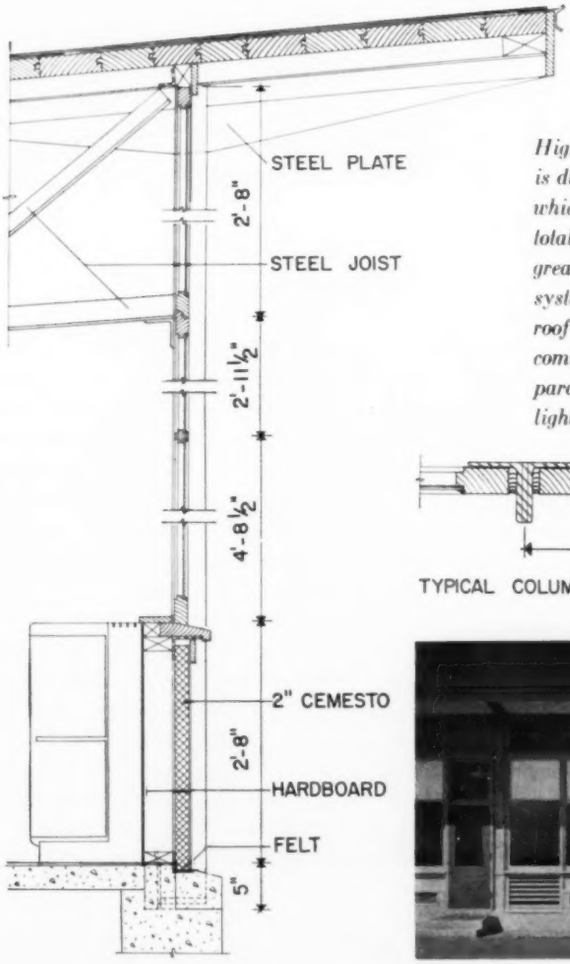
Cost per linear foot for all three schools was: Skowhegan, $33.80; Bar Harbor, $34.75; Brewer, $63.00. In terms of per cent of total cost the figures become: Skowhegan, 15.5 per cent; Bar Harbor, 13.5 per cent; Brewer, 20 per cent.

Joseph W. Molitor



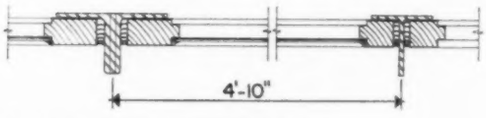


BAR HARBOR

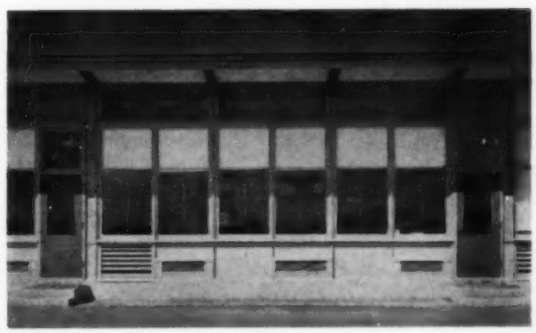


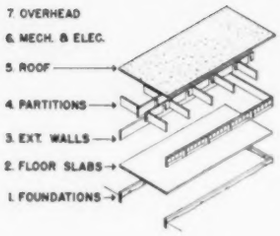
BREWER

High cost of the exterior wall at Brewer is due largely to the light steel framing, which accounted for nearly 90¢ of the total for this unit. This is a case where great economy in part of a framing system (here, the rigid steel frame for roof support) is offset by a high concomitant cost of a portion — the comparatively expensive fabrication of the light steel wall framing



TYPICAL COLUMN & MULLION





SKOWHEGAN

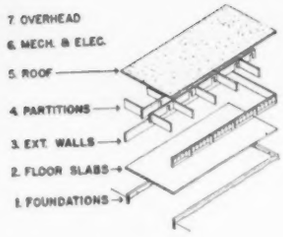
COMPARATIVE ANALYSIS 4: INTERIOR PARTITIONS

In the group of costs under this heading we have included, as we indicated previously, all building items that can be called part of an interior wall: framing, plywood, casework, doors and trim and hardware, chalkboards and tackboards, painting, etc. As one might expect, there is little variation between the three schools; they all have similar wall treatments inside. At Skowhegan the interior partitions are often load-bearing because, instead of resting on corridor walls the roof framing paralleled the length of the building, bearing on partitions between the end-on classrooms. Yet in spite of this condition the Skowhegan cost was low — $1.58 — compared to Bar Harbor's $1.65. In the Brewer school the cost for this unit, $1.63, is traceable to the extra material and, more particularly, extra labor, involved in coping many partitions to the exposed roof trusses which run to one masonry partition in the corridor; at Bar Harbor the higher figure is due to the height of inter-classroom partitions. In terms of total building cost the percentages run from 14.2 per cent for Bar Harbor to 15.5 per cent for Skowhegan, with the latter figure reflecting the increased amount of interior partition required by the end-on classrooms. Linear foot costs (without regard for height) are: Skowhegan, $25.35; Bar Harbor, $27.40; Brewer, $23.75. Any unusually lavish amount of built-in furniture, casework, or expensive wall materials in unusual amounts — none of them used in these schools — would of course have affected these figures.

BAR HARBOR

BREWER

Joseph W. Molitor



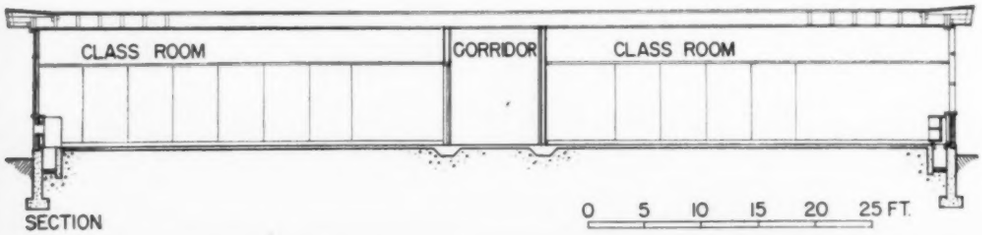
COMPARATIVE ANALYSIS — 5: ROOFS

As the illustrations show, roof construction is quite different for each of these three schools; and in the cases of Skowhegan and Bar Harbor different parts of the same building are differently roofed. Skowhegan is framed longitudinally in wood, except for rigid steel frames over the multi-purpose room. Bar Harbor's classroom wing is framed with cantilevered wood trusses carrying a clerestory, laminated wood arches over the multi-purpose room and single-pitch flat roof over the remainder. Brewer's roof is framed with light steel joists bearing on a central masonry spine. Bar Harbor's roof was most expensive — $2.04 per sq ft of building — whereas Skowhegan's cost $1.91 and Brewer $1.42.

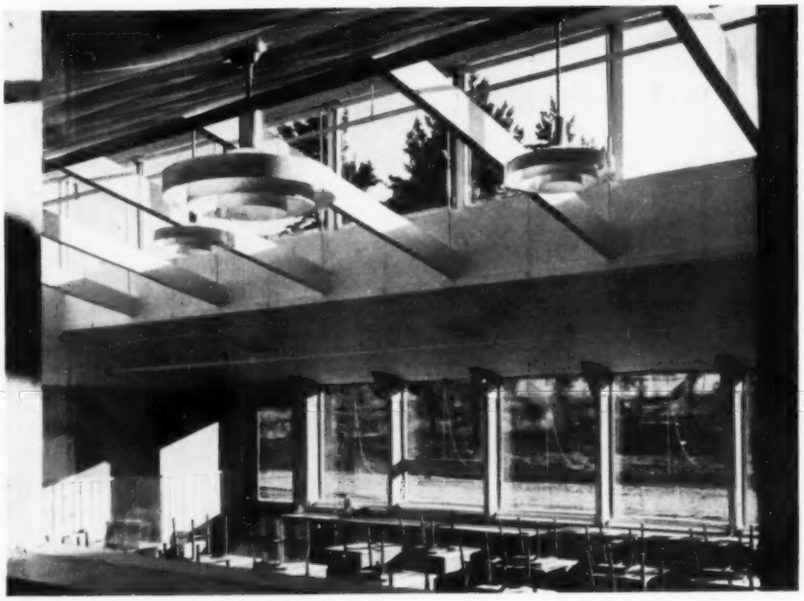
The low roof cost at Brewer is partly due to elimination of a separate ceiling; the exposed framing and roof plank are painted. If ceiling tile had been added this cost would have risen to about $1.80. But Brewer's roof is very economical in other basic respects. When we break the "roof unit" into its elements we discover that the cost of framing alone was $1.18 at Skowhegan, $1.45 at Bar Harbor, and only $1.00 at Brewer. Also, the roof covering, considered by itself, cost less at Brewer because there were no changes in roof level, no breaks, and flashing problems were appreciably less.

It cannot be too strongly emphasized that these comparative figures — particularly the near equality of total roof cost for Skowhegan and Bar Harbor — result from a combination of factors. Considering each school as a whole, the cost data are perfectly valid; but any assumption that a clerestoried roof could be built for nearly the same figure as Skowhegan's flat roof would be completely unwarranted. With this reservation (since certain more costly features are normally balanced by others less expensive) it can be seen that it mattered little what framing scheme was used; roof cost was about $2.00 and major savings could be made only by eliminating components — for instance, the ceiling tile at Brewer. In per cent of building cost, Skowhegan ran 18.5 per cent, Bar Harbor 17.6 per cent, Brewer 12 per cent.

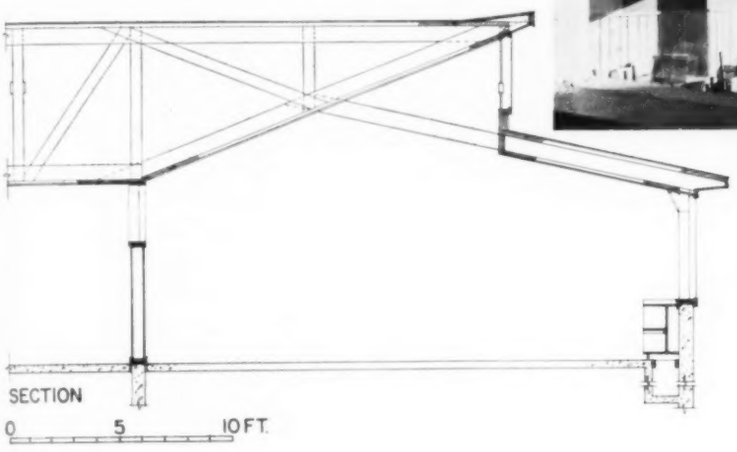
This completes the physical shell and structure. Up to now we have accounted for 66 per cent of Skowhegan's total cost, 65.5 per cent of Bar Harbor's, 65.5 of Brewer's.



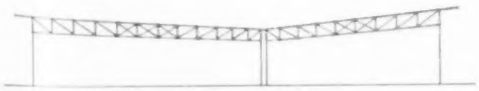
SKOWHEGAN'S *roof has longitudinal wood framing over bearing partitions between end-on classrooms, with rigid steel frames over multi-purpose room*

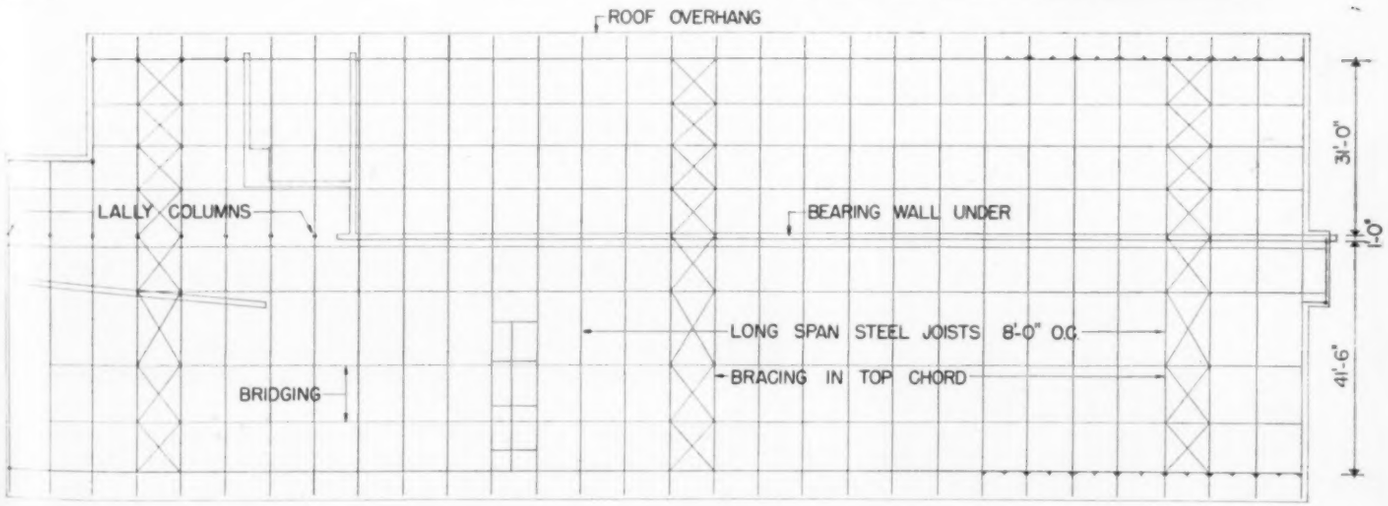


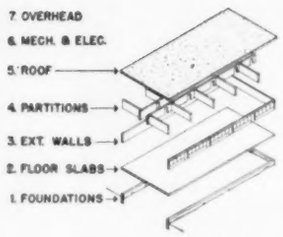
BAR HARBOR'S *expensive classroom wing roof (clerestory suspended by steel rods from cantilevered trusses) was offset by areas of flat roof and by very economical laminated wood arches over the multi-purpose room*



BREWER *school's roof, economical in itself, caused part of the higher cost of exterior walls and interior partitions (see preceding pages). Below, roof framing plan*







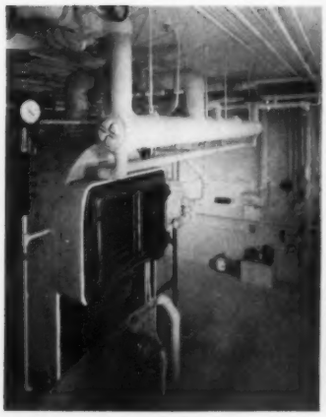
COMPARATIVE ANALYSIS — 6: MECHANICAL AND ELECTRICAL; OVERHEAD

The mechanical and electrical grouping covers all heating, ventilating, plumbing and electrical work. In these schools all such services were of the same general type; incandescent lighting is used in all three, for instance, although at Skowhegan (which has deep end-on classrooms) an electric eye system is needed to maintain the light level. Plumbing and heating and ventilating are done by pneumatically controlled unit ventilators supplied by steam; oil is the fuel. At Brewer, a no-draft type of unit ventilator that was used was part of the reason for somewhat higher unit cost. Mechanical and electrical work, particularly heating, is the source of a large portion of building cost in Maine.

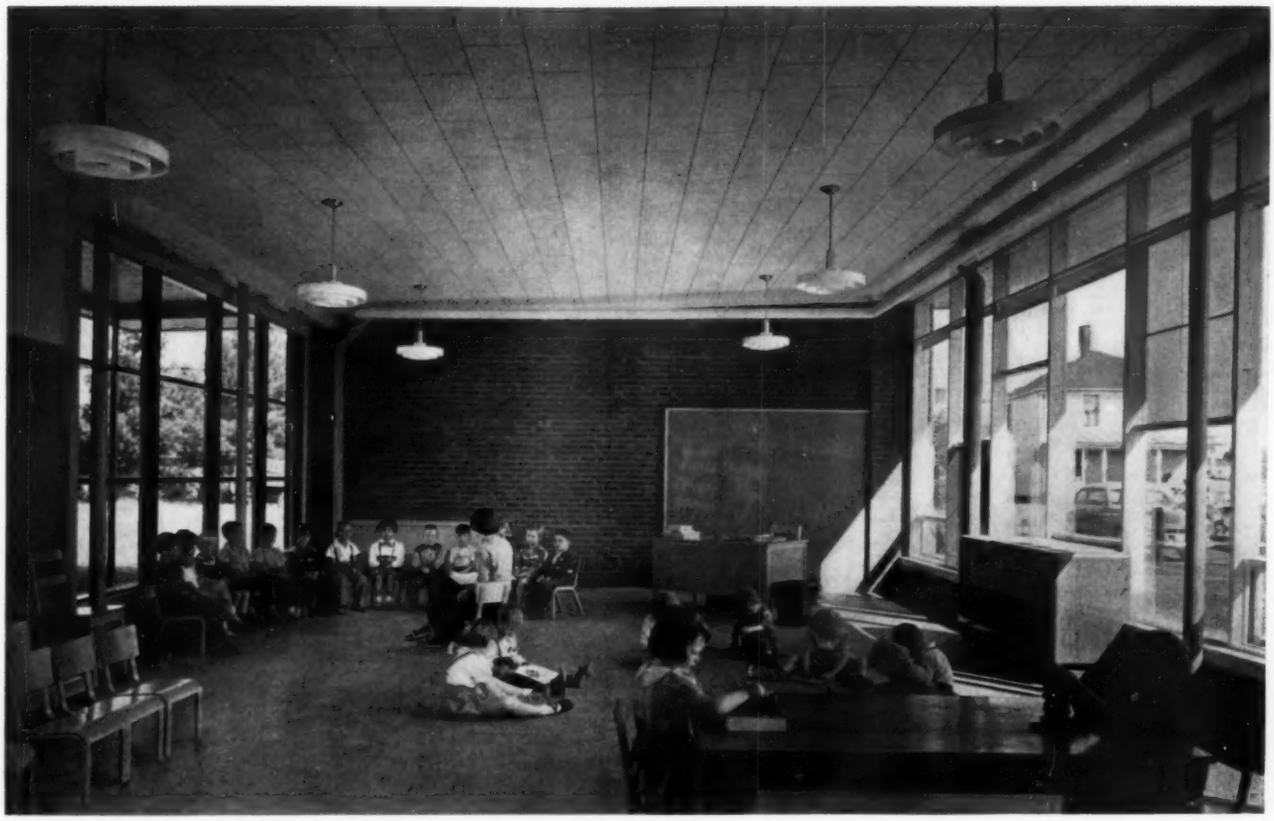
At Skowhegan, heating and ventilating unit cost was $1.60; at Bar Harbor, $2.08; at Brewer, $2.25. The difference between Skowhegan and Bar Harbor costs is due almost entirely to Bar Harbor's longer piping runs, together with changes in floor level (kindergartens higher and classroom wing lower than the central block). As we have said, chimney cost has been included in heating cost. In all three schools this chimney cost a nearly constant $2,500, which suggests investigation into cheaper means of achieving equivalent draft, particularly for small school buildings where its relative importance would, of course, increase.

At Brewer, running all piping in a peripheral pipe trench (see preceding pages) was another reason, added to unit ventilator cost, for the higher heating figure. While the trench is physically part of the foundation structure and has been so considered in this analysis, it can be argued that it would be more rational to allot trench costs to the heating figure and deduct them from site and foundation costs. There is at least a small trench in all three schools; transferring the difference between costs of the Brewer and Skowhegan trenches to the heating and ventilating component, this figure at Brewer rises to $2.35 while site and foundation cost there drops to $1.67 — a figure between those for Skowhegan and Bar Harbor, exactly what was expected.

Plumbing costs vary but little, from 60¢ at Bar Harbor to 72¢ at Brewer. Electrical costs were, at Skowhegan, 53¢; Bar Harbor, 43¢; Brewer, 40¢. In sum, mechanical and electrical equipment accounted for about 27 per cent of all building costs.



Toilets in all three schools have hung plywood toilet stalls, wall-hung fixtures. Plumbing costs per fixture show little variation: Skowhegan, $300; Bar Harbor, $330; Brewer, $310. Electrical systems (left, below) also varied little, with a slightly higher figure at Skowhegan where the end-on classrooms necessitated extra fixtures for more continuous use, and where photo-cell controls were used. Above, typical heating plant; unit ventilator installed in the Brewer School



Joseph W. Molitor

Kindergarten, Skowhegan School

Recapitulation

Overhead, seventh unit of this analysis, remained fairly constant at about 6 to 7 per cent of building cost. At Skowhegan it was 72¢ per sq ft; at Bar Harbor, 80¢; at Brewer, 68¢ — a low figure, perhaps, because the contractor's home office is in the adjacent city of Bangor.

Conclusions. This completes the analytical portion of our investigations. To recapitulate, we have examined three similar schools, broken their costs down into unfamiliar though logical units, and compared these units, examining the causes for the variations between them.

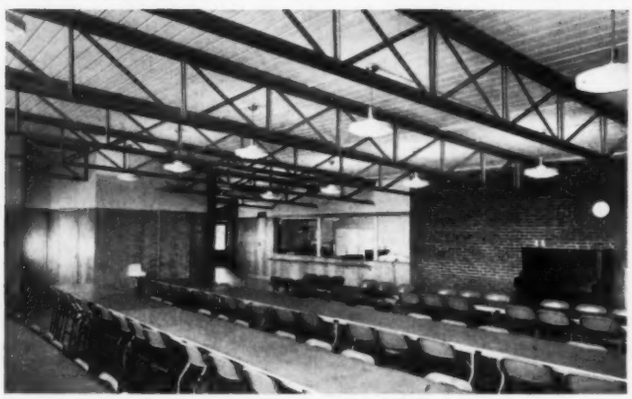
First, while it is obvious that the site affects cost, we were surprised at the great effect site variation can have. None of these school lots was impossible, or so different as to make building on it a matter of major engineering. All were typical school lots with the variations one would expect; and even those normal differences produced cost variations of some magnitude.

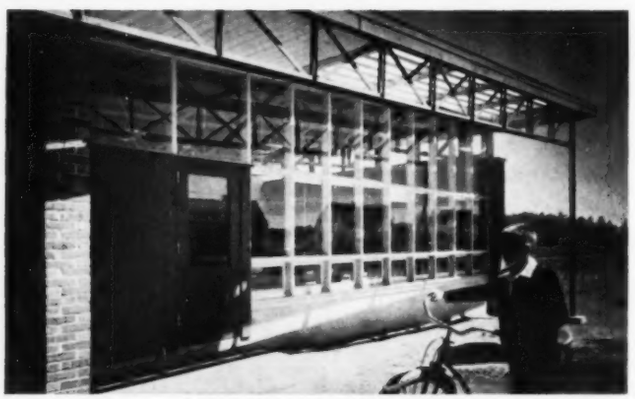
As an experiment let us take the cheapest unit cost for each group and devise a fictitious school: Skowhegan foundation, $1.16; Brewer floor, 59¢; Skowhegan exterior wall, $1.55; Skowhegan partitions, $1.58; Brewer roof, $1.42; Skowhegan mechanical and electrical, $2.80; Brewer overhead, 68¢. Such a school would cost $9.78 per sq ft, a saving of 17 per cent over Brewer, 16 per cent over Bar Harbor, 5.5 per cent over Skowhegan. This is no small saving, particularly in comparison with the first two. If Brewer had been 17 per cent cheaper we could have built about 3,320 more sq ft for the expenditure actually made — over two more classrooms. Of course a building could hardly be built to this fictitious total cost, but the process indicates a goal to keep struggling toward; and reducing school costs is a struggle. Any economies we have achieved in our schools have come from a continual pressure for the small savings.

We learned a great deal from the Brewer school. Although this building was the direct result of our previous cost research, we see now that the earlier studies did not go far enough. While we gained definite economies as anticipated, these were largely offset by factors such as the difficult site and the exterior wall cost, which we failed to anticipate.

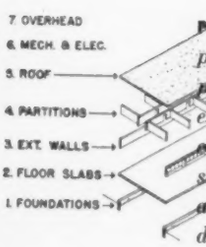
We now see several avenues to further economies, some of them listed on the next page; yet perhaps the most important finding of this study is: *There is no royal road to truly economical school design*, no gimmick or trick construction that will magically halve building cost. Savings come as the result of hard work, guarding always against expense in all items, paying intense attention to details and keeping continually in mind the money behind every line the architect draws.

The author wishes to acknowledge the great help given by Mr. Benjamin Harrington of H. P. Cummings Construction Co., Winthrop, Maine, builders of Bar Harbor and Skowhegan Schools, in compiling cost breakdowns used as basic figures in this study.

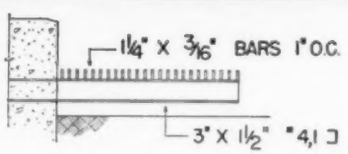


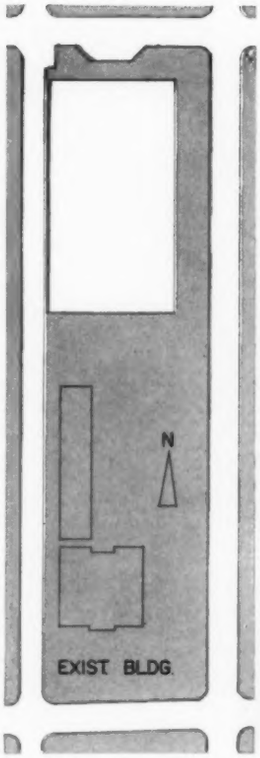


Joseph W. Molitor



POSSIBLE FUTURE ECONOMIES: *Eliminating pipe trench and chimney, possibly using a package unit in each room or shifting to high-temperature, high-pressure hot water with smaller piping; eliminating exterior bearing foundation walls and using some other material than concrete for frost curtains; mixed steel and wood structural frames, steel gratings rather than concrete platforms at entrances (to save money and to gain a foot scraper; see grating used at Skowhegan, right); further development of simplified sash, started at Bar Harbor where we first eliminated exterior window sills — all should save something. But, in Maine, heating still is a large part of building cost, roofs have to support certain snow loads, open corridors are not yet accepted by the public. Photos at top of page, left column, top to bottom: multi-purpose rooms at Skowhegan, Bar Harbor and Brewer. Right column, top to bottom: Skowhegan corridor, where changes in floor surfacing and indoor planting areas increased floor costs; Bar Harbor's airy-ceilinged classrooms; Brewer entrance*



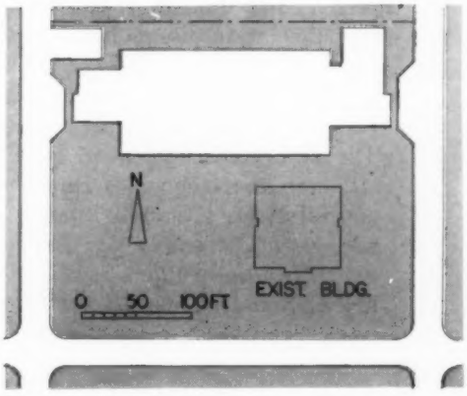


ROOSEVELT SCHOOL

Orientation Affects Cost and Design

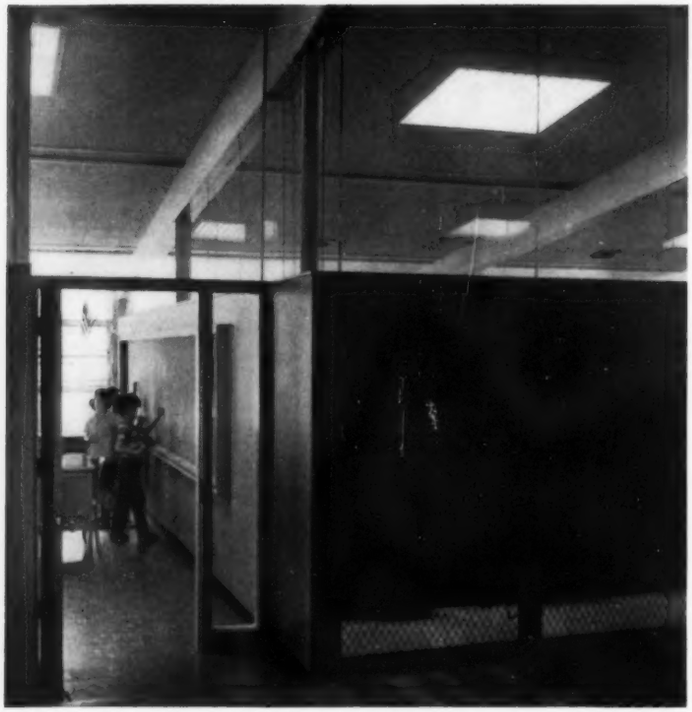
Caudill, Rowlett, Scott & Associates, Architects

THESE TWO SCHOOLS IN MIAMI, OKLAHOMA afford an opportunity to study the effect on construction cost of geometry of form, which in turn was dictated by their sites. Both were built at the same time by the same contractor (Hoke Construction Co., of Stillwater) of the same materials and using the same type of structure. Further parallels: Both are in highly developed residential areas, on small sites containing existing buildings which could not be removed until new buildings were ready. They have the same number of classrooms and comparable dining, assembly and recreational facilities. Both sites were level, offering almost no structural problems, and at both the prevailing breeze, which exercised a dominant effect on building design, came from the south. The sites dictated placement and orientation of buildings; and at Wilson determined its size and shape.



Ulric Meisel

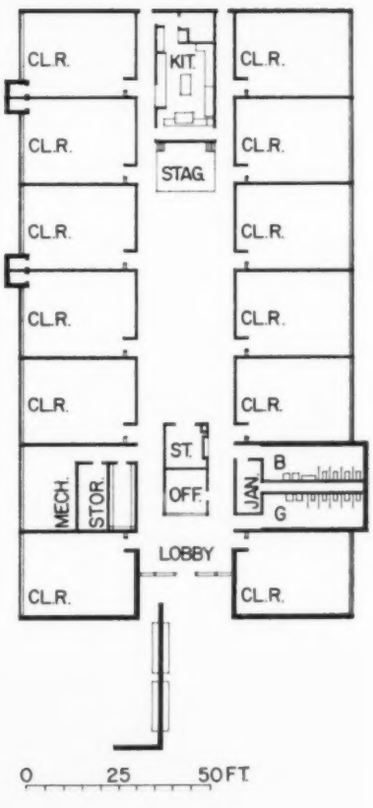
WILSON SCHOOL

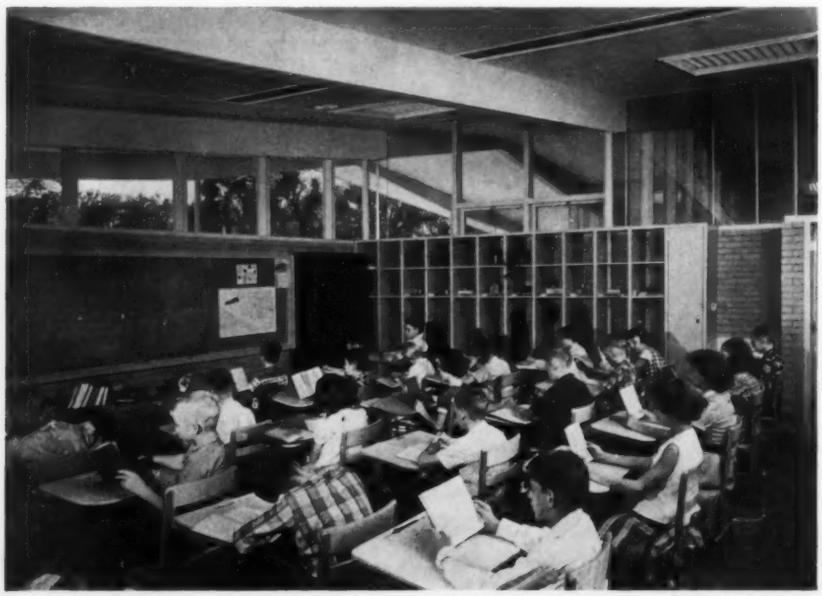


THE ARCHITECTS REPORT:

"These two schools went through our office as twins, so to speak, even though they are different. We were hired by the Miami School board after they had seen and liked the finger plans of our Blackwell and Stillwater (Okla.) schools. When we presented preliminary schemes for double-loaded corridor buildings they were disappointed until we pointed out the advantages of compactness for the very small sites.

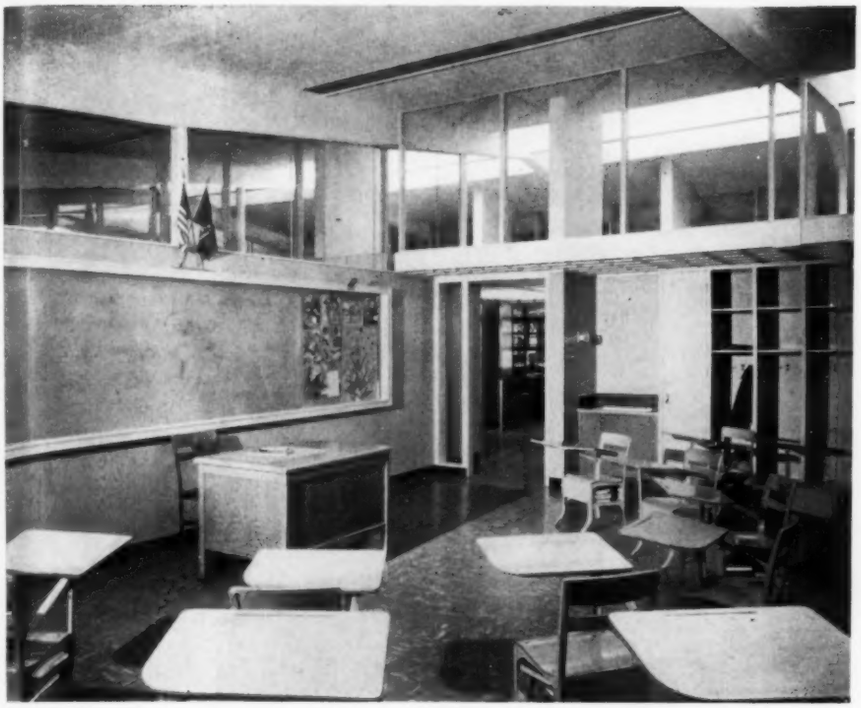
"You cannot say that either is the best school; each solves the problem for its specific site. The facilities are nearly equal. The classrooms are equal; each school has cross-ventilation, although the techniques employed to take advantage of the natural breeze are quite different. A great difference lies in the way eating, assembly and recreational spaces have been provided. In respect to noise, Wilson might be better; as to family living, Roosevelt with its multi-purpose hall might be just as good; yet Wilson seems slightly better educationally."



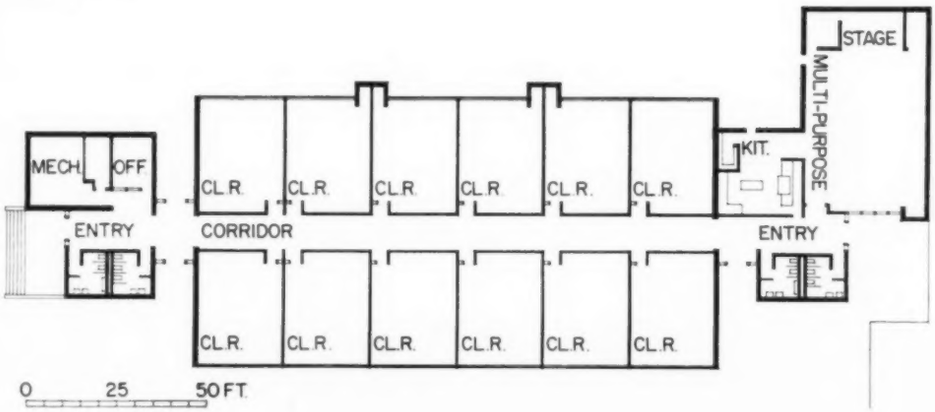


Ulric Meisel

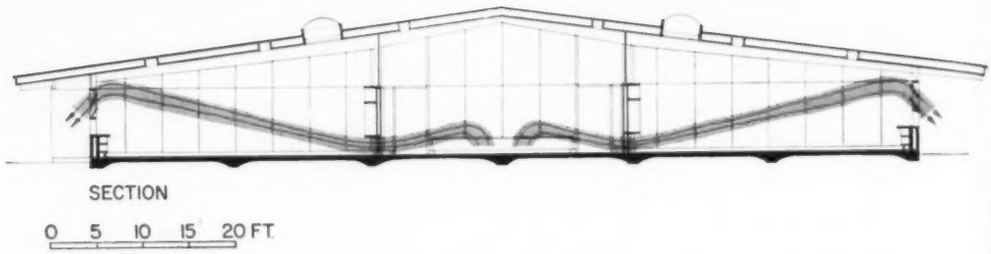
ROOSEVELT SCHOOL, *on this page, has one principal entrance at the south (bottom of plan) which also receives the prevailing breeze. Wide central hall is the multi-purpose room; office and storage at one end, stage and kitchen at other, are placed to force breeze sideways into classrooms through continuous grilles at floor line (see top photo)*



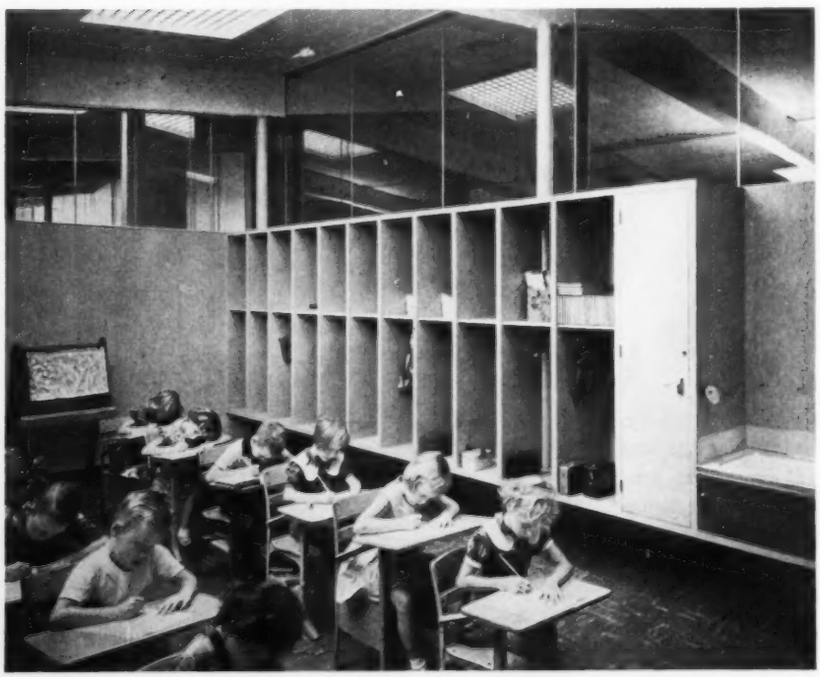
WILSON SCHOOL, *on this page, has two main entrances, separate multi-purpose room. Breeze enters south windows, traverses building through clerestory over narrow corridor*



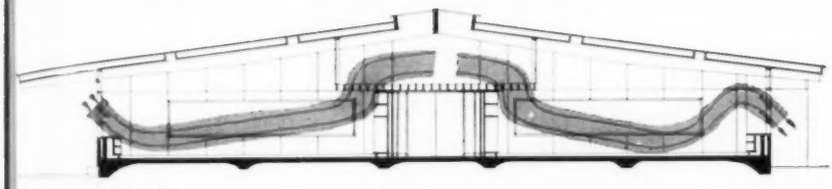
Both schools are framed with heavy laminated wood beams on pipe columns, have 12-in. cavity brick exterior walls; projected steel sash; built-up, heat-reflective roofs; stained fir plywood partitions. Heating systems are low-pressure hot water circulated through wall convectors and panels in the concrete floor slab; controls are electronic



ROOSEVELT SCHOOL *ventilation. Note also top-lighting for deep ends of classrooms; plastic "bubbles" also light multi-purpose hall through glass in partitions*



Ulric Meisel



SECTION

0 5 10 15 20FT

WILSON SCHOOL *ventilation requires projected sash hinged as shown. Top lighting from continuous skylight also lights deep ends of classrooms through egg-crate and continuous interior clerestories*

The architects further report: "As to efficiency, since just about every square foot of Roosevelt is used for educational purposes we believe this school is the more efficient; considering educational use alone, it might be hard to justify Wilson's corridor. As far as interior expression is concerned, the schools seem equal. They both 'feel' good. The illuminant ceiling in Wilson's hall, particularly, seems very pleasant; this hall is far from the traditional dark tunnel. Both schools are top lighted, Roosevelt with plastic bubbles, Wilson with a continuous glass skylight. Although we did not take any solar heat radiation measurements, it has seemed obvious that less hot sun-radiation effect is perceptible under the plastic bubbles; so, in our third Miami School we are again using the bubbles.

"Regarding cost and geometry, the low-perimeter Roosevelt School cost the least. Wilson has 19 outside corners, Roosevelt 12; Wilson has 15 inside corners, Roosevelt 8. *Wilson has 43 per cent more perimeter than Roosevelt.* Also, Wilson has 3 per cent more enclosed area — some of it accounted for by the single-purpose corridor — although the schools are the same size."

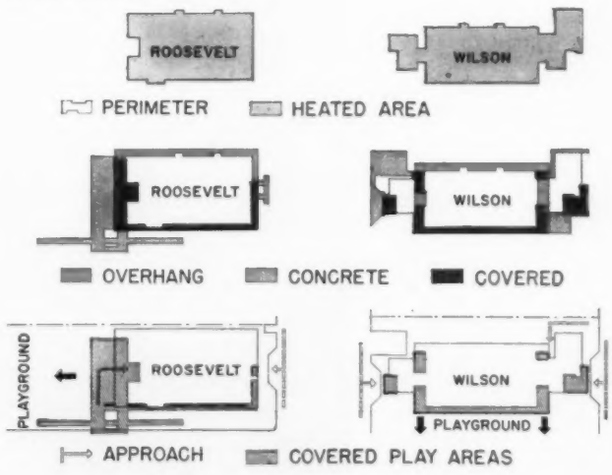
COMPARISONS

1. AVERAGE BIDS

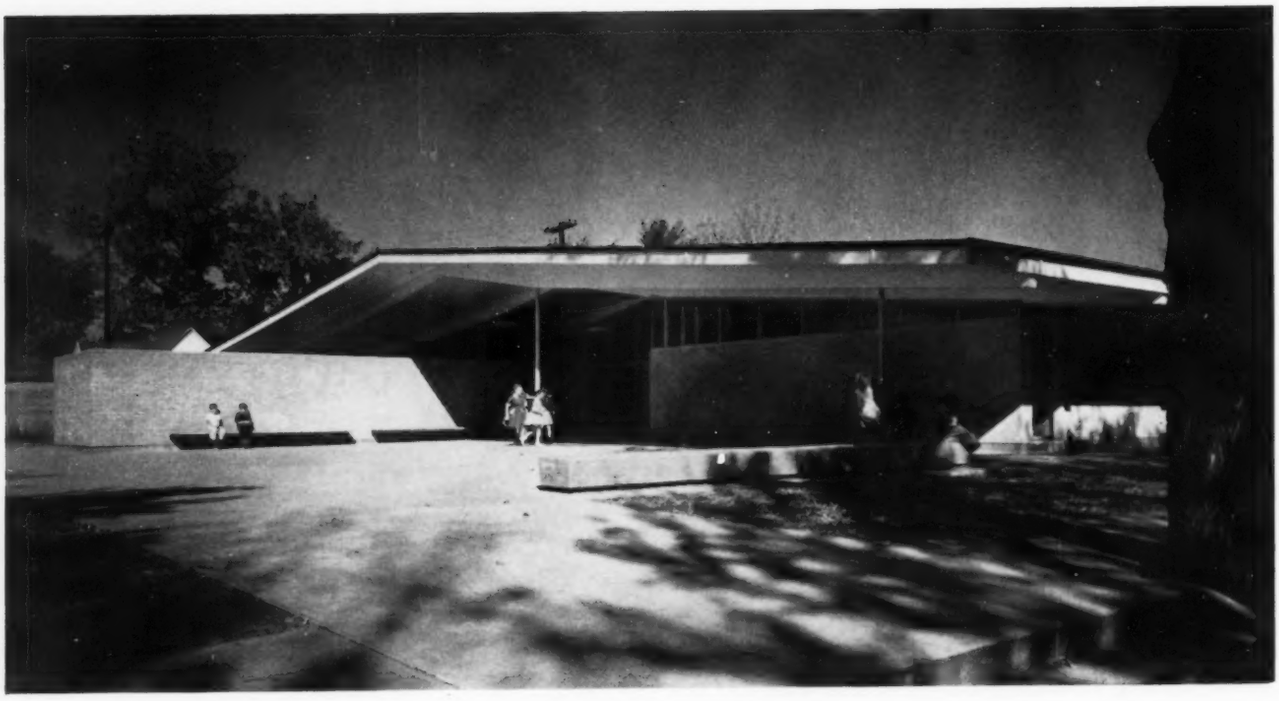
Based on 14 general contract, 8 plumbing and heating, 4 electrical bids

	ROOSEVELT	WILSON
General Contractor	$140,512	$160,407 (14% more)
Plumbing, Heating	31,417	36,026 (14.6% more)
Electrical	16,511	18,509 (12% more)
TOTALS	$188,440	$214,942 (14% more)
2. ACTUAL COST	$165,003.57	$180,120.09 (9% more)
3. USABLE AREAS (sq ft)		
Heated areas (@ 1	14,915	15,397
Covered areas (@ ½	1,677	1,982
Overhangs (@ ⅓	450	586
Uncovered areas (@ ¼	1,223	880
TOTALS	18,265	18,845 (3% more)
4. AREAS (sq ft) ACCORDING TO A.I.A. METHOD		
Enclosed areas (@ 1	14,915	15,397
Covered areas (@ ½	1,677	1,982
TOTALS	16,592	17,379
Actual cost per sq ft	$9.94	$10.36 (4% more, but not fair comparison)
5. MULTIPLE USE OF SPACE (sq ft)		
Kitchen and Assembly	2,814 (21% more used)	2,320
Circulation	908	2,191
	3,722	4,511 (21% more required)

USABLE AREAS AND ACCESS



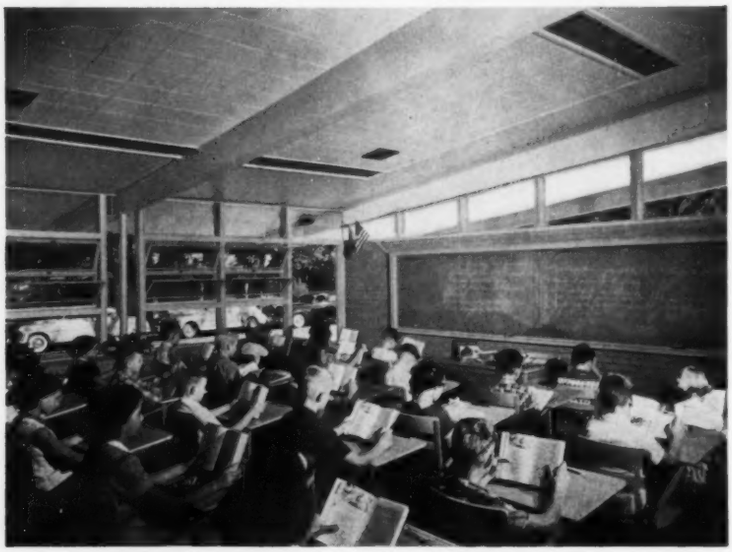
TWO OKLAHOMA SCHOOLS



Ulric Meisel

ROOSEVELT SCHOOL

Entrance, and classroom



Conclusions

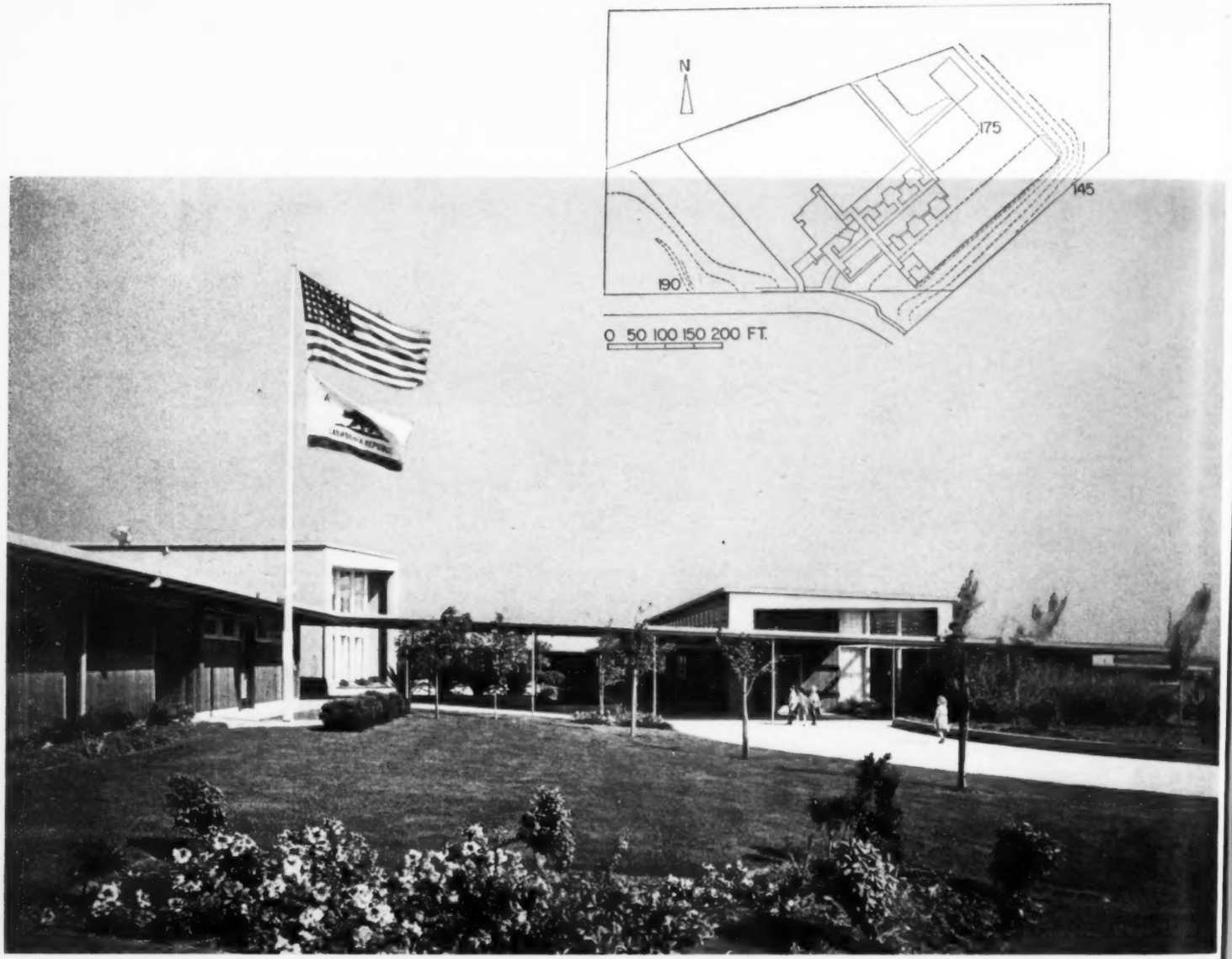
The architects conclude: "A while ago another architect, visiting Wilson Elementary, remarked on its warmth and friendliness. That is important because children and teachers need an environment conducive to learning and teaching. We have tried to put many things into Miami's new schools: to flood each classroom — although the rooms are 'end-on' for economy in construction and heating — with natural light evenly distributed; to protect against sun and glare with wide overhangs, so no blinds or shades are needed; to provide unique natural ventilation — the first application of recently developed principles; to provide warm floors indoors and play spaces outdoors sheltered against cold north winds, hot summer sun, or rain, or snow; to help the teachers by giving them built-in furniture and storage units. Now that the schools are built Roosevelt seems architecturally more satisfying from the exterior,

WILSON SCHOOL

Entrance

Classroom

perhaps due to its site; but due more, we think, to the unity achieved by putting all areas under one roof while avoiding monotony by creating visual interest at the entrance. This result was not foreseen; we thought once that Wilson would be more attractive. We have learned, too, that compactness pays off; the 9 per cent higher cost of Wilson gave us only 3 per cent more useful area. The greater efficiency of Roosevelt is most apparent in kitchen-assembly-circulation areas."



Growth of an Indoor-Outdoor Unit

Roger Sturtevant

John Muir Elementary School
Martinez, California

John Lyon Reid, Architect

Eckbo, Royston & Williams,
Landscape Architects

Coddington Co., Mechanical Engineers

Dariel Fitzroy, Acoustical Engineer

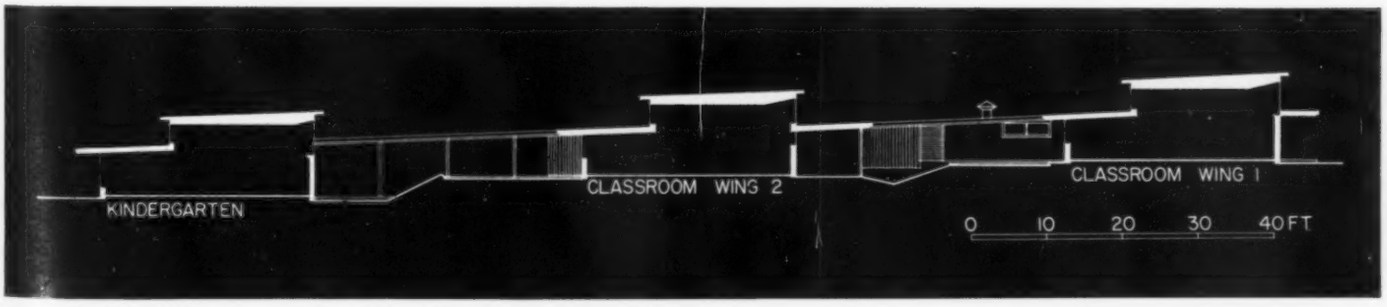
THIS IS THE SECOND of two schools for the Martinez School District by the same architect. The first was Montecito School; both were programmed by the same educational staff, and in John Muir were incorporated some refinements of the earlier plant. Bids for John Muir were opened in May 1950; construction began in July and the building was occupied for the fall term in 1951. Cost was $383,825, of which about $21,400 was for moving approximately 30,000 cu yd of earth on the hilly site. Mechanical and electrical work accounted for $90,190 of the total; not including site work, the building (32,777 sq ft) cost $10.83 per sq ft at a time when the average was about $14 in that locality.

John Muir has 10 classrooms in two wings, with a single open corridor serving both by means of short cross-over corridors. There are one kindergarten, a multi-purpose building and an administration unit containing offices, teacher's room, library and work room. All are fitted to the site contours; classroom wings were laid out so 9 more rooms and another kindergarten could be added. According to Willard Knowles, Superintendent, these are to be added soon: when teachers were asked to recommend improvements for the proposed addition they had no suggestions.

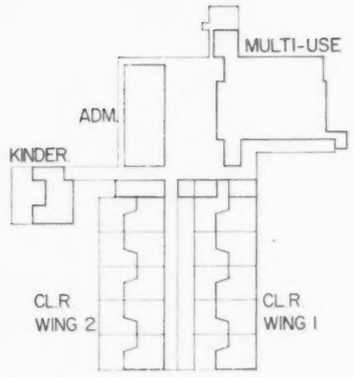
The same note is sounded by the present principal, Terrence White, who says: "All of us at Martinez are very proud of the school . . . the community, too . . . junior college dances, Scouts and Camp Fire Girls meetings, lodge and P.T.A. functions take place here. There has been no recommendation for changes nor any complaint except concerning minor things which have nothing to do with structure or planning. . . . The children's pride shows; maintenance problems are at a minimum — due also, of course, to the maintenance staff. . . ."

Kenneth M. Forry, formerly at Martinez and now Superintendent of Fairfax, Kentfield, San Anselmo Districts, concurs. He interpreted to the architect instructional program, educational philosophy and use of the building; Muir was designed, 1, for smooth flow of student traffic, always toward supervision; 2, so that general organization facilitated traffic flow; 3, to provide integrated indoor-outdoor areas for all classrooms; 4, with full regard for esthetic quality, to induce proper attitudes and make the building itself a satisfactory teaching tool; 5, with healthy respect for cost.

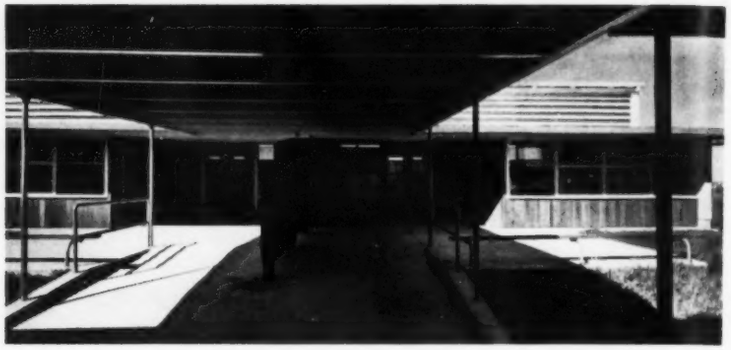
Administration, entrance and office

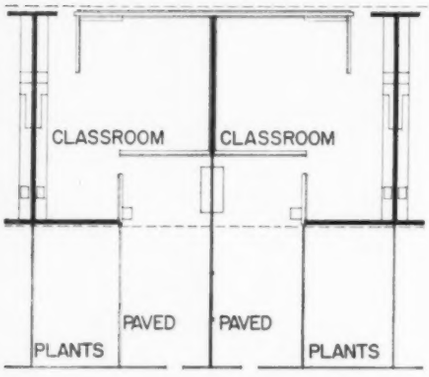


Heating plant serves educational ends

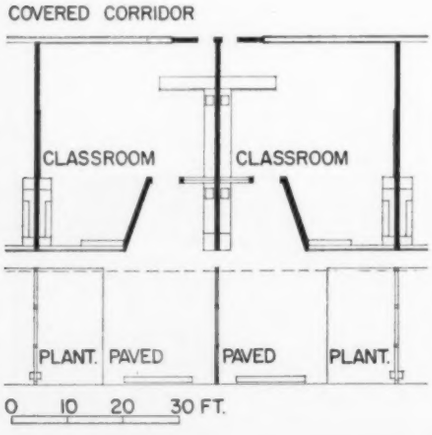


Schematic plan



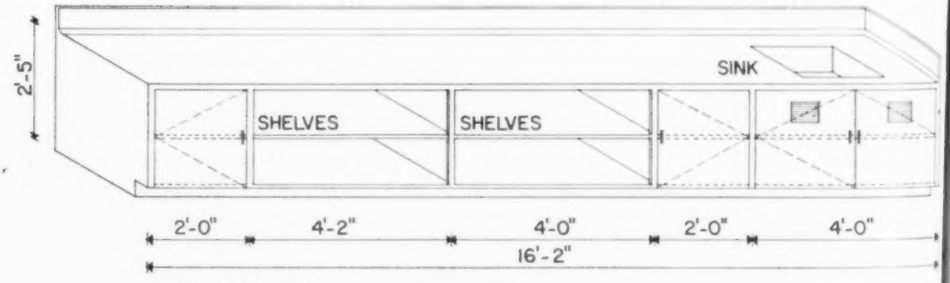


Classroom plans: above, at Montecito, predecessor of John Muir, shown below



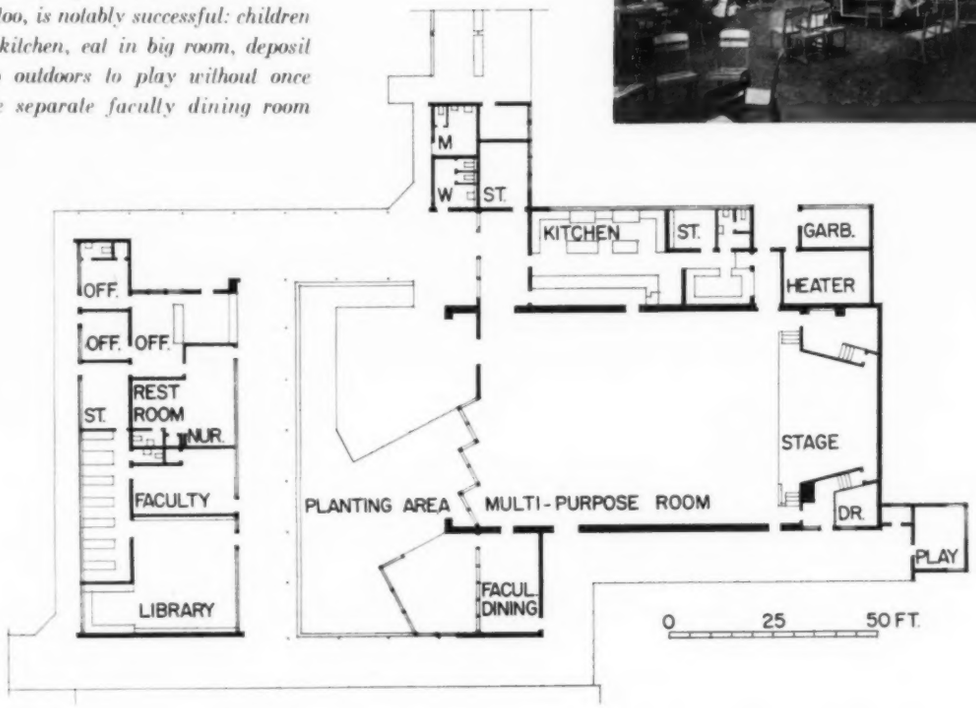
EVOLUTION OF CLASSROOMS

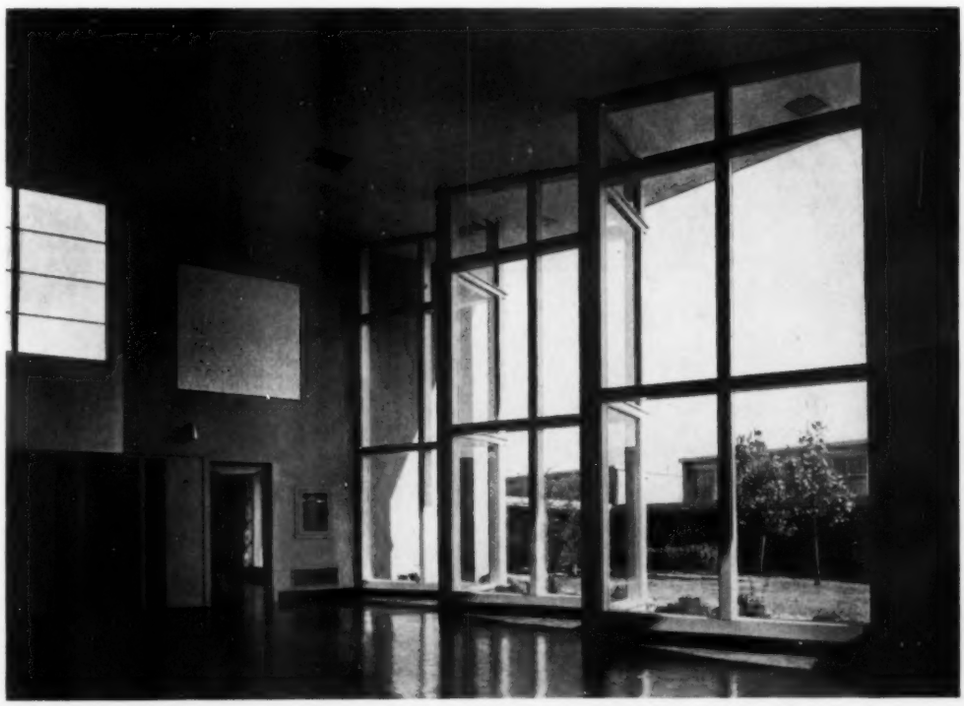
John Muir classrooms developed from suggestions made by teachers who had used Montecito for one year. In general, Montecito's alcoves were used for activity work; John Muir's are reading and study areas. This permits a much closer relation between indoor and outdoor work areas; only a glass screen separates the two; counters (detail below) are almost continuous. Slanting wall makes alcove easier to supervise. Outdoor classrooms all face south to permit year-round use.



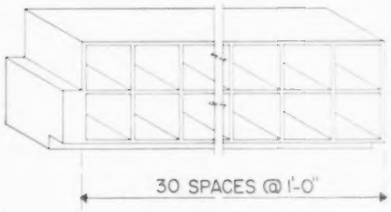
CLASSROOM WORK COUNTER & CASE

LIBRARY *(photo extreme right) is in administrative unit, has adjacent workroom which also serves as teachers' workroom.* **MULTIPURPOSE ROOM** *(plan and photo below) is carefully designed acoustically so small children can be heard at assemblies. Part of the ceiling is reflective, remainder and some wall areas are acoustically tiled to prevent echoes and reverberation; glass wall opposite stage is zig-zag to eliminate sound reflection. Circulation, too, is notably successful: children enter serving line at kitchen, eat in big room, deposit dirty dishes, and go outdoors to play without once crossing traffic. Note separate faculty dining room*

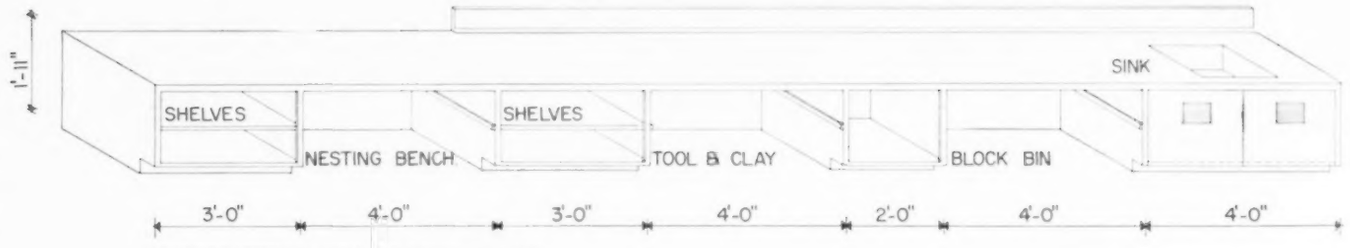




Roger Sturtevant



KINDERGARTEN STORAGE CABINET



KINDERGARTEN WORK COUNTER & CASE

KINDERGARTEN

Shown on opposite page, kindergarten is separate unit with long counters over storage cabinets and a pleasant alcove. Stained glass panel had to be omitted from contract to keep cost within the budget; but so important was it considered that the architect and the designer-fabricator, Cummins Stained Glass Studio of San Francisco, jointly donated the window

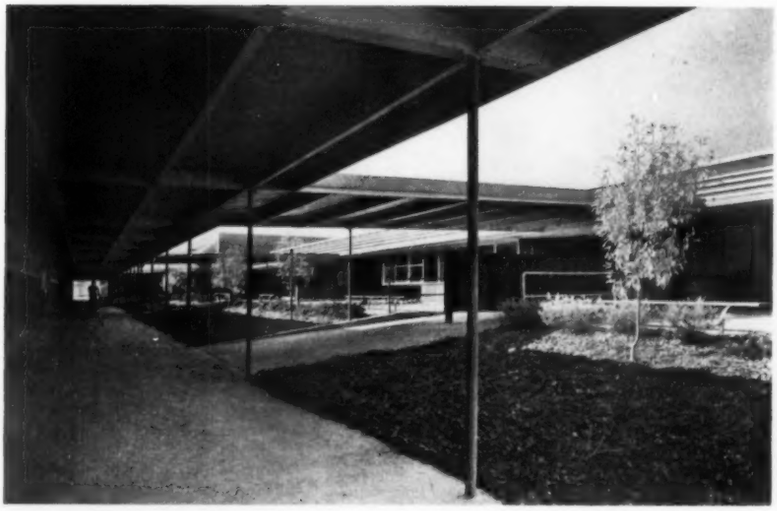
LANDSCAPING

This, also had to be cut when contract was let; it is being completed by the children themselves according to the original design, as part of a definite program. Some of the accompanying photos were made two years ago, others recently; the difference, says the principal, is startling when realized. Center photo, right, shows one error: earth strip, once planted with low ground-cover, has been scuffed bare by active play.

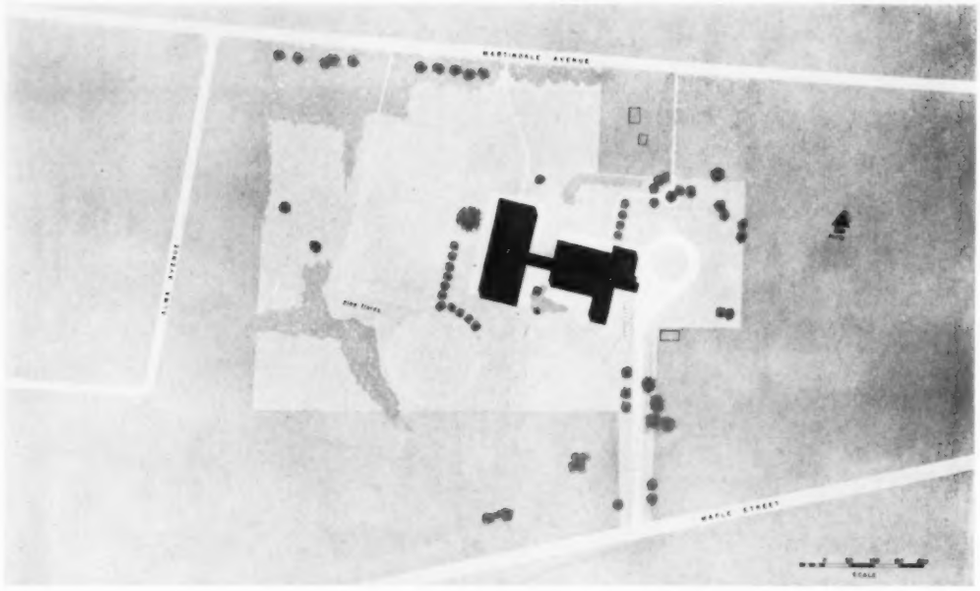
Note that light level under canopies is quite low. Says the photographer: "Actual outdoor light meter readings near entrance doors about equal indoor readings — fine for kids going in or out but hell on the photographer!"

CONSTRUCTION

Light steel framing, wood and plywood walls, concrete slab on grade; plasterboard and acoustic tile ceilings, asphalt tile floors; radiant copper-tube floor panels, individual thermostatic controls



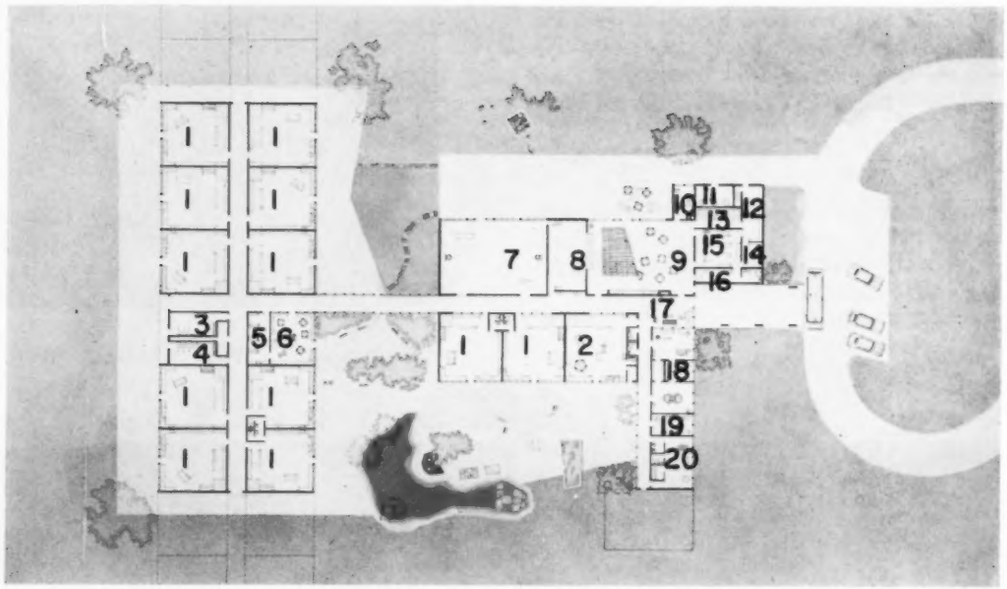
Roger Sturtevant



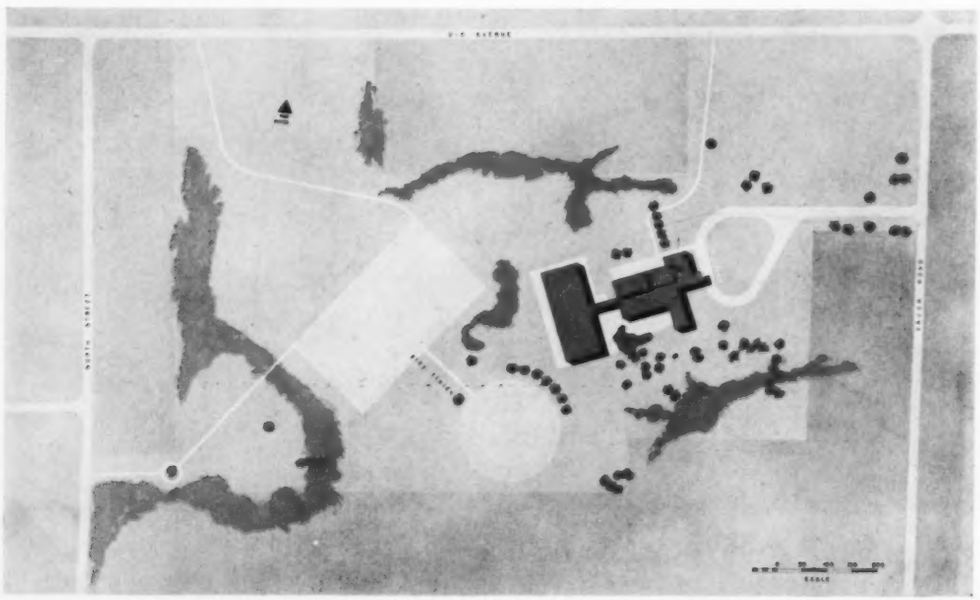
MAPLE
STREET
SCHOOL

LEGEND

1. Classrooms
2. Kindergarten
3. Boys Toilet
4. Girls Toilet
5. Storage and Work Room
6. Library
7. Play Room
8. Stage
9. Cafeteria-Auditorium
10. Music Room
11. Electric Vault
12. Receiving Room
13. Table Storage
14. Food Storage
15. Kitchen
16. Scullery
17. Lobby
18. Administration
19. Teachers
20. Health



DIX
AVENUE
SCHOOL

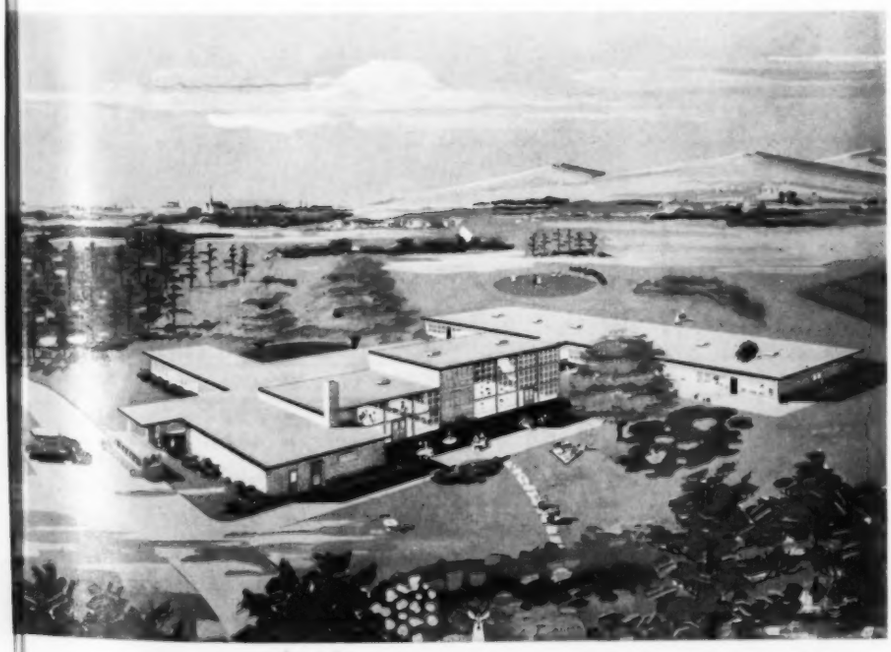


THE HUDSON FALLS Central District is a consolidation of facilities for several communities. A centralization study made in 1951 by the N. Y. State Education Department resulted in a program estimated to cost $3,600,000 to provide for an expected 2,000 pupils in five years from that date, or about $1,800 per pupil. A 1953 study by the consultants shows the need to plan for more students — 2,450 five years hence — but cuts cost to about $3,080,000, or approximately $1,250 per pupil. Four buildings make up the program now going ahead: three elementary schools in this issue and a Junior-Senior High School by Sargent, Webster, Crenshaw & Folley, Architects.

Three Schools in One District

Hudson Falls, N. Y., Central School District

Office of Henry L. Blatner, Architect; Engelhardt, Engelhardt & Leggett, Consultants

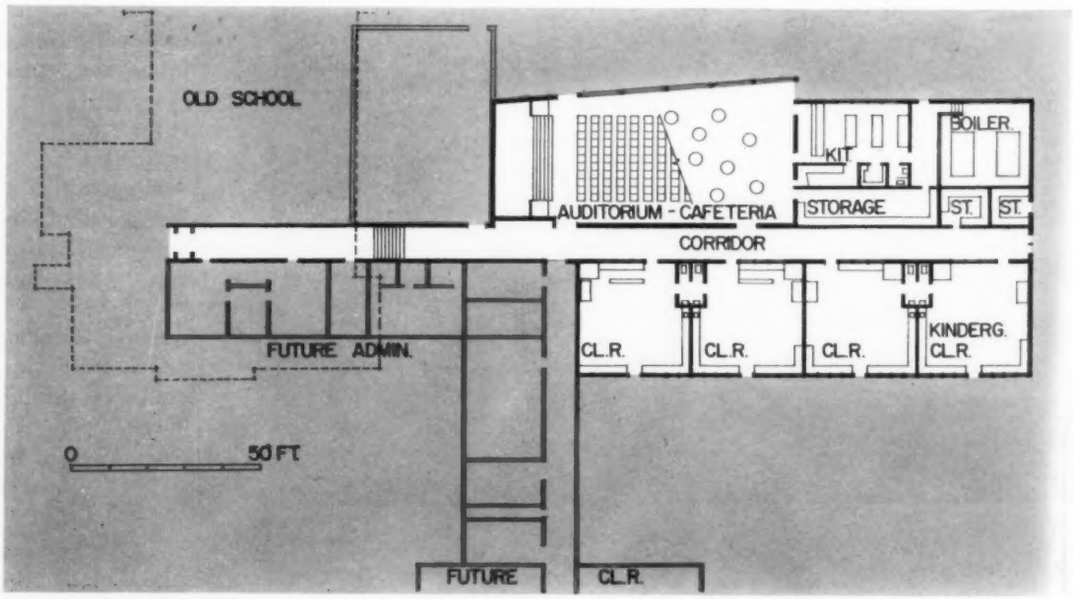


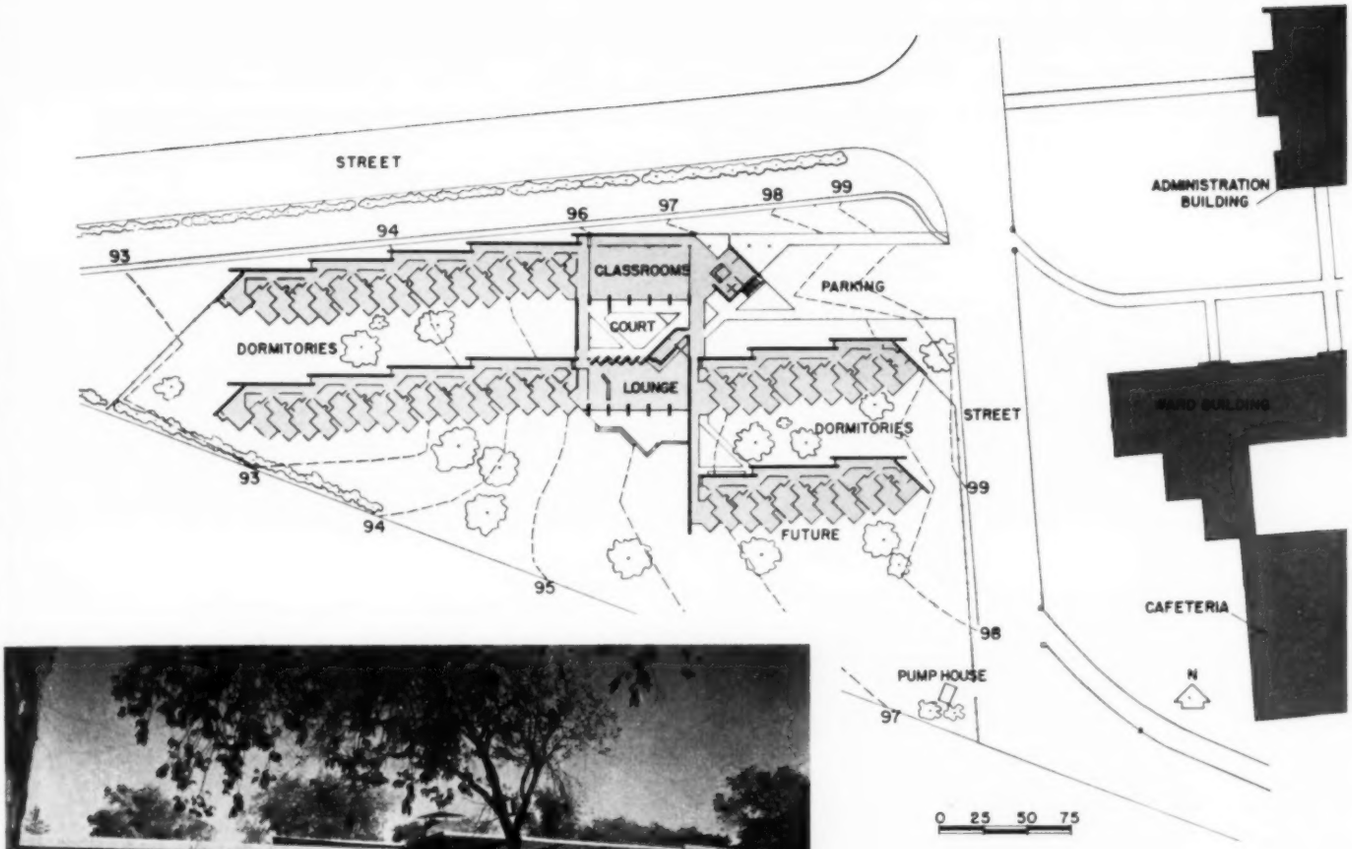
The two schools shown here (another appears on the next page) are on sites nearly identical, with almost the same contours, area, orientation, etc. The buildings will be identical except for color of exterior brick and decoration; their cost ($435,000 each), cubage (400,700 cu ft each at $1.07) and area (30,000 sq ft each at $14.50) are identical. Adding to this construction cost all fees, costs of site purchase and development, of furniture and equipment, the grand total for Maple Street becomes $510,250; for Dix Avenue, $516,500, site cost $6,250 more. Both are K-12 schools for grades 1 through 6, each with a library, play room, assembly-cafeteria, kitchen, health suite, offices.

ADDITION TO SCHOOL NO. 2

The site of Hudson Falls' School No. 2 has three existing buildings; to one of these is being added a primary wing consisting of a kindergarten and three classrooms plus a cafeteria-auditorium, kitchen and boiler room, later to be expanded with a playroom, administrative suite and classrooms as financing becomes possible.

Originally it had been proposed to unite all the teaching space into one large area which would also include the corridor space. Low partitions, casework and furniture groupings would have subdivided the large area according to activity groups. For various reasons, however, the school authorities preferred the more conventional classroom arrangement shown below; the addition is proceeding in this manner. Construction cost is $179,000; cubage, 137,640 cu ft at $1.30; area, 10,510 sq ft at $17.00. Total cost, including fees, site work, furniture and equipment: $210,250.





PRIVACY FOR STUDENTS IN PSYCHIATRIC NURSING

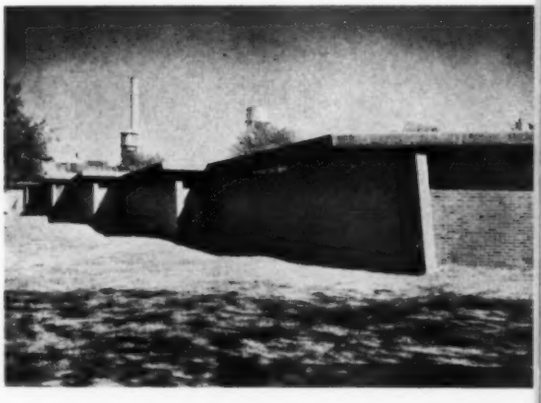
THIS NEW RESIDENCE for student nurses solved a difficult problem for the University of Oklahoma School of Medicine. The School offers an elective course in psychiatric nursing which by state law requires three months of resident training at a state mental institution; Central State Hospital, the institution selected for affiliation because of its nearness to Oklahoma City and the Norman campus, was a depressing place for girls of college age, and the elective course was consequently unpopular. The new dormitory, designed to be as homelike and non-institutional as possible, has overcome the girls' objection to the resident-training requirement and has made the course more acceptable.

The building is on the hospital grounds, but occupies its own triangular site close to the main entrance; existing trees and new planting, plus blank end walls, provide almost complete privacy from every side. Bedrooms are offset in series of four to shorten corridor length and to increase the homelike atmosphere; every bedroom has two exposures and direct access to a secluded outdoor living area. Lobby, lounge and classrooms (students are required to take certain academic courses while in residence, and such classes are attended also by outsiders) are grouped around a central patio forming a pleasant unit for dances and other social functions well away from the bedroom wings.

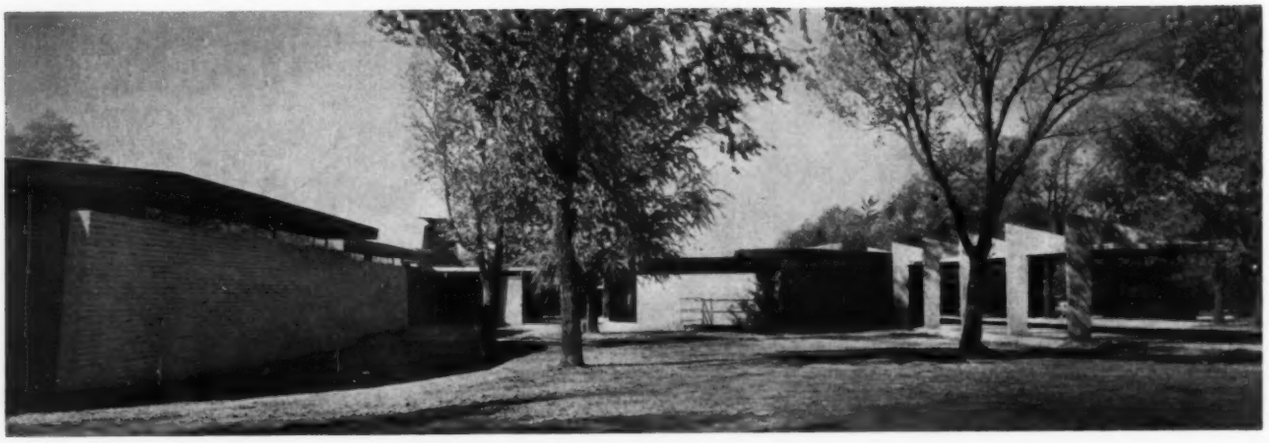
Central Oklahoma State Hospital

Norman, Oklahoma

Conner and Pojezny, Architects



Julius Shulman

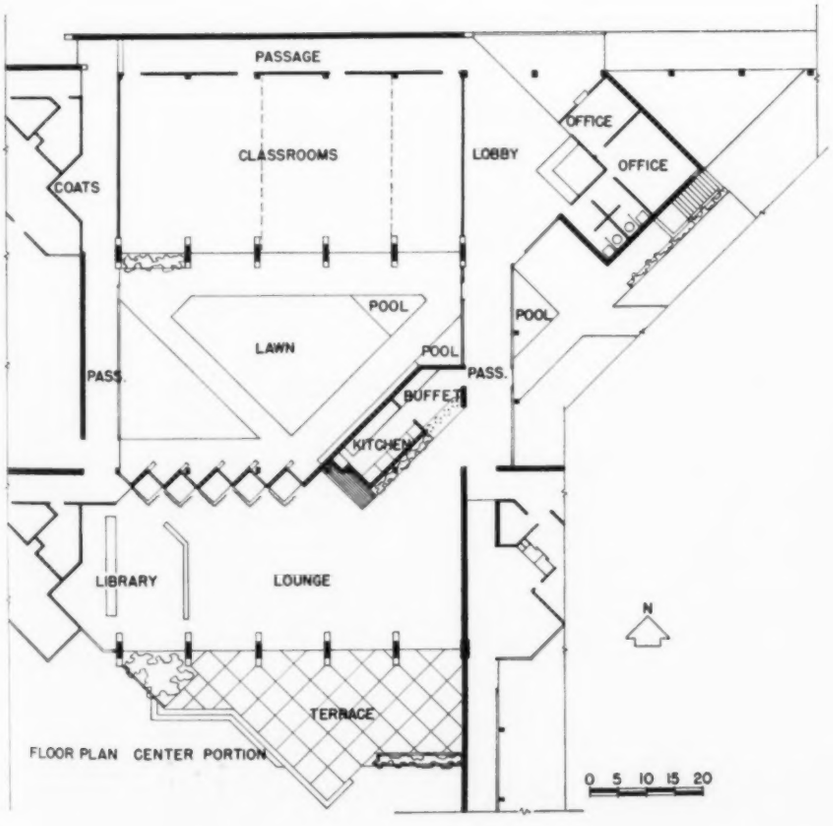


Julius Shulman

From nowhere within dormitory are hospital buildings and grounds visible: all end walls on that side are solid brick. Students returning from ward duty along covered walk at left know that behind those walls lies privacy

ARCHITECTURAL INTERIORS

Design | *Details* | *Materials* | *Equipment*



FLOOR PLAN CENTER PORTION

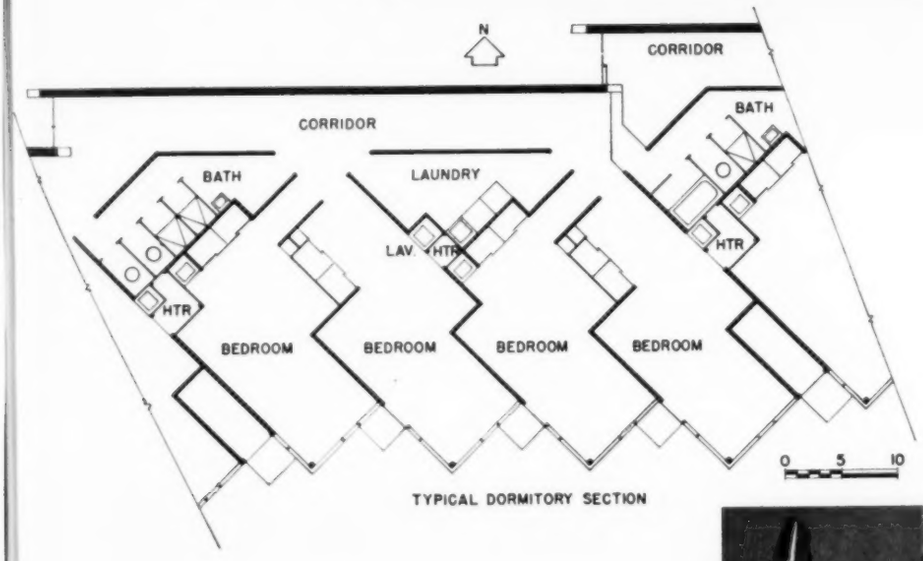
Building is wrapped around secluded outdoor areas such as court between classrooms and lounge (above and below). The organization of space (short corridors, human-size recreational areas), the choice of materials, and the residential scale create a personal rather than an institutional environment

Classrooms and lounge, with connecting court, are used as one unit for dances and other social events. Lounge has "date corners" (below) which are satisfactorily private though open to supervision

ARCHITECTURAL INTERIORS

Design | *Details* | *Materials* | *Equipment*

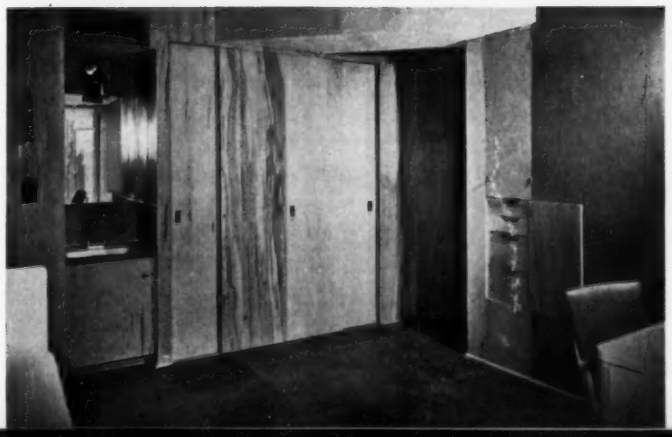
Julius Shulman



TYPICAL DORMITORY SECTION

Building was planned to be as nearly fireproof as possible and to require minimum maintenance. Floors are asphalt tile throughout, left uncovered in central "public" areas. Interior partitions are red brick or natural gum plywood; ceilings are acoustic tile in central area, plaster in bedroom wings

Bedrooms are angled to make most of prevailing summer winds and exclude often severe blasts of winter winds: every room has two exposures, direct access to outdoor recreation area. Recessed bedroom and bathroom doors minimize traffic problems, eliminate need for wide passages. Each bedroom has one fabric-covered wall, floor covering and trim in matching color and harmonizing metal furnishings



THE STATE OF CONTEMPORARY ARCHITECTURE

BY SIGFRIED GIEDION

II. | THE NEED FOR IMAGINATION

EVERY PERIOD able to give concrete expression in the form of its structures to what was living unconsciously in the minds of its people had to possess a creative imagination.

Imagination is the power of framing new artistic or intellectual concepts. By imagination an image can be created of something that has never till then existed: as in the "Midsummer Night's Dream"

> ". . . imagination bodies forth
> The forms of things unknown."

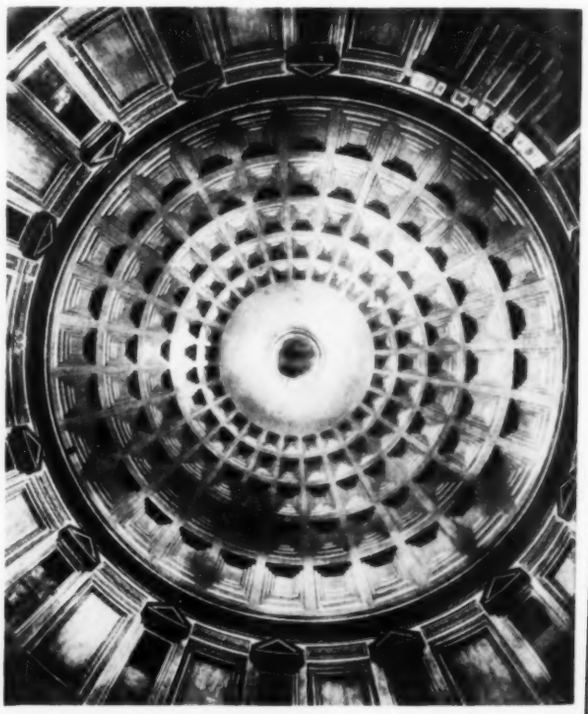
It is imagination that is the root of every creative thought or creative feeling. Whether a building has an emotional impact or remains mere dead material depends entirely on whether or not it is instilled with imagination.

Imagination has been necessary in every period, but perhaps never so keenly as in our own, when science and industry constantly pile up a perturbing mound of new materials. Some of these are seductive but dangerous to employ; others call for imagination that they may give birth to "things unknown."

The contact between the builder and the building is no longer as immediate as it was in the period of brick, stone and wood. Nowadays the immense apparatus of the building industry stands between architect and architecture. It is difficult for the architect to use this complicated instrument of production, and the building industry often sets up independent standards of its own.

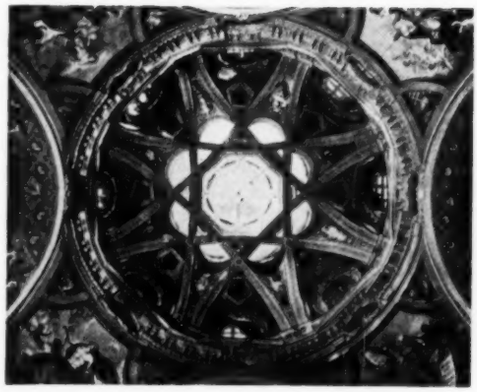
There is another reason why imagination is so rare today. Is it possible in our western civilization (as we had to ask in "The Humanization of Urban Life," ARCHITECTURAL RECORD, April, 1952) to build a bridge between personal life and the life of the community? Does the man in the street want to shift from his passive role as a mere onlooker, whether at a ball game or a television screen, to become an active participant in social life?

There exist certain positive signs that man is in truth not satisfied with his position as a passive spectator. These signs emerge now all over the world, and can be observed in many spontaneous outbursts when suddenly the onlooker is transformed into an active participant, as well as in the interest and pleasure with which the general public cooperates in the celebration



1

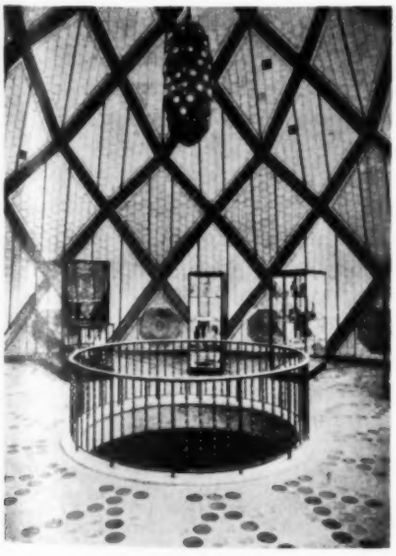
"At a certain stage of its development, each civilization has solved the vaulting problem in a way that has expressed its own emotional ideas. Fundamental forms were evolved like the dome and the barrel vault — both based on massive construction; or the cross rib vaulting, based on a skeleton framework. . . . We are sometimes compelled to recognize today, as in the nineteenth century, that the possibilities for solving the vaulting problem offered by the structural engineers can provide the stimulus to push the architect into new adventures."



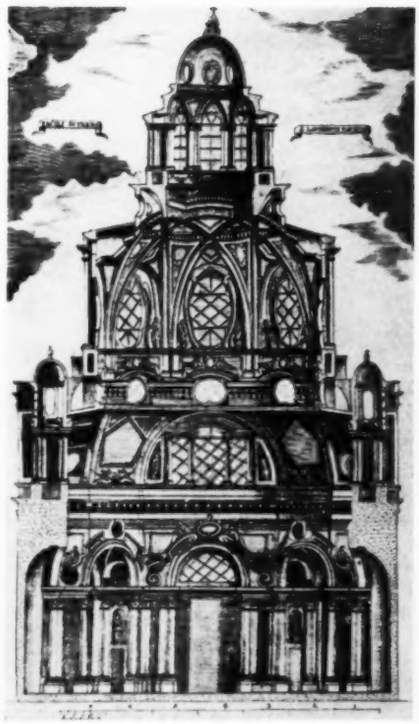
2

1. Cupola of the Pantheon, "one of the finest still standing vaults of the Roman Empire period where for the first time the vaulting problem was solved in large and majestic dimensions."
2. View into dome of church at San Lorenzo, by Guarino Guarini. "The significance of the intersecting arches is to produce the impression of spatial infinity."
3. Interior of the Crystal Pavilion, Köln, 1914, by Bruno Taut. "Even before the engineers, the architect forms a fantastic dome with a kind of rudimentary space frame."

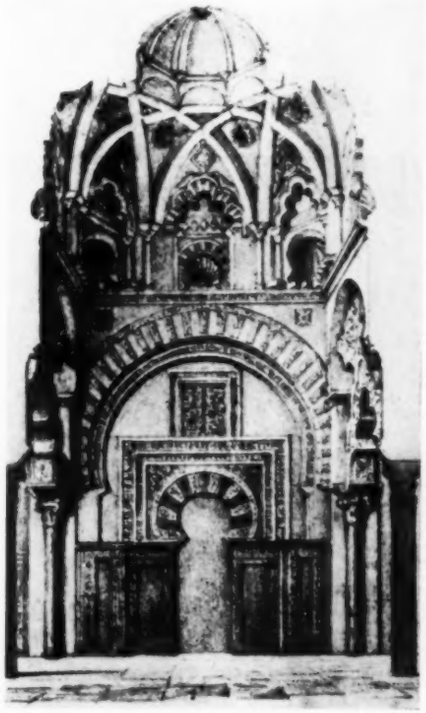
4. Section through cupola and lantern of church at San Lorenzo.
5. Section through the Mihrab of the Mosque at Cordoba, Spain, 9th century. "The Arabs have developed a space frame construction long before the Gothic cathedrals."
6. Festival Hall, Chianciano, Italy. Pier Luigi Nervi, structural engineer; Mario Loretti and Mario Marchi, architects. "The cupola is elliptical in form, a space frame consisting of prefabricated concrete elements."



3



4

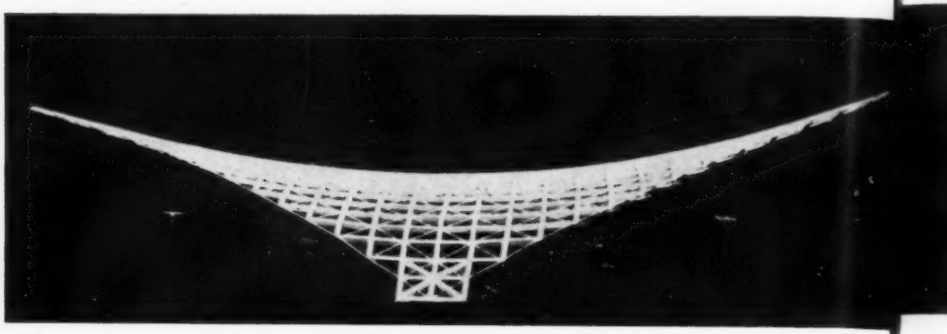


5

6

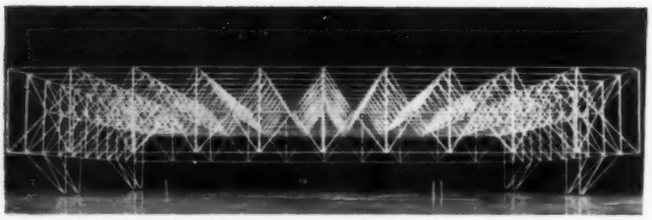
7

7. Buckminster Fuller's Geodesic Dome. "The overall tendency is lightness, spatial flexibility." 8. Eduardo F. Catalano: hyperbolic paraboloid geometric study of tone length, model under test. "Here, in the space frame, is hidden a new starting point for spatial imagination"

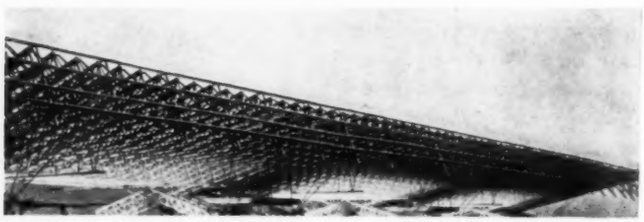


8

9



10



9. Model of experimental space frame structure, being designed by graduate students of Institute of Design, under Konrad Wachsmann, in collaboration with Mies van der Rohe. Structure spans 200 feet, using identical length members allowing various means of support. 10. Space truss hangars, by Wachsmann.

of age-old customs. This was very evident in the recent coronation festivities in Britain, when many half-forgotten ceremonies were introduced anew.

This latent demand for a more developed social life is breaking through in many countries and is made manifest in new plans and projects which, once again after a long lapse of time, provide points of crystallization for the social life of the people. This self-healing process starts from different sides. In USA, recent plans for a new center in Philadelphia, the redevelopment of large blighted areas in Chicago, where four independent schemes are being carried out, the planned Boston Back Bay Center, or the enormous shopping center at Roosevelt Field, Long Island. Nearly all these schemes are showing traces of a new social imagination.

SOCIAL IMAGINATION

The fulfillment of this worldwide trend to create centers of social activity can no longer depend solely upon the technical capacities of the architect. His task today is far more complicated than, for instance, that of his Baroque predecessor, who was required to give form to the programs of a clearly structured society.

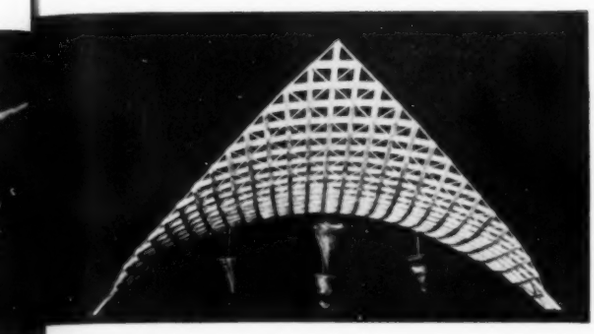
Most schemes of this sort that have been prepared are still in early stages of execution or remain mere paper plans, but one of the few examples where this social imagination has been given three dimensional expression is the much discussed and much decried "*Unite d'Habitation*," 1947–52.

The boldness of this venture does not consist in housing 1600 people under one roof. This has often been done in America. Its boldness consists in the elaborate way in which the architect has given form to the half-conscious tendencies of the crowd: its boldness lies in its *social imagination*. The individual inhabitant may prefer to remain a lost number in a huge building, or he may help to develop a social life that can draw him out of the melancholic isolation that is the common form of existence in every large city. The architect can do no more than provide the physical points of crystallization, and this Le Corbusier has done.

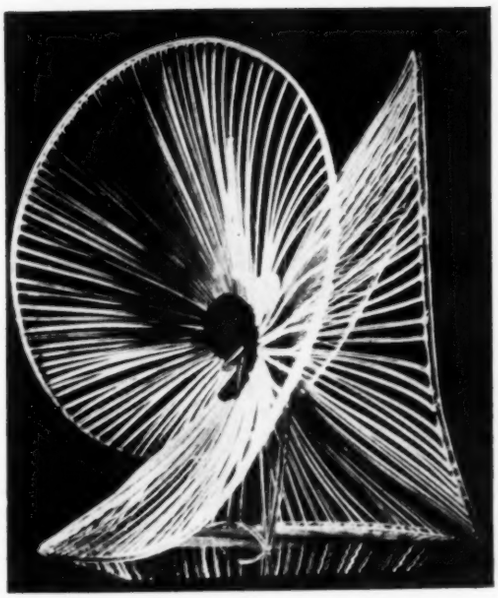
SPATIAL IMAGINATION

The need for imagination implies that there exists a need for something more than the bare interpretation of functional requirements.

Nothing is so difficult to find today as an imaginative handling of space — a *spatial* imagination. An



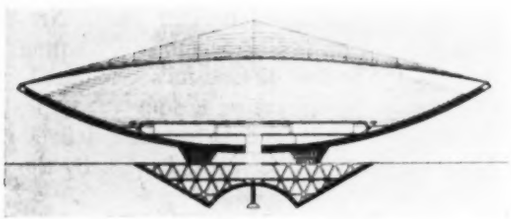
8



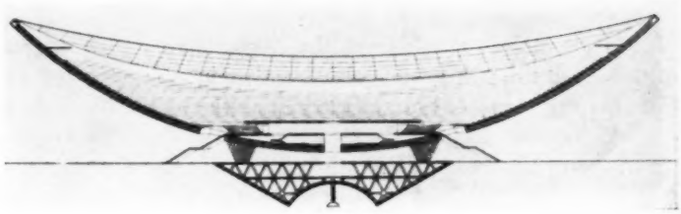
11

11. Naum Gabo: spheric construction, Fountain, 1937, of plastic 16 inches high. "The development of space frame structures demands that sculptor and architect work together from the start, as well as the engineer." 12. Eduardo F. Catalano: Stadium La Pinta for 8,000 spectators, with aluminum space frame

12



12



imagination that can dispose volumes in space in such a way that new relations develop between differing structures, different edifices, so that they can merge into a new synthesis, a symbolic oneness.

Even greater hesitations arise when the building program demands that the architect create an interior space which transcends its purely technical and organizational requirements, as in great halls destined to reflect general aspirations — whether they be the nave of a Cathedral or the meeting place for a world organization.

The need for a monumental expression in art and architecture is one that has existed, and has been solved, in all civilizations. Our own cannot be an exception.

The area where the spatial imagination has always had the greatest freedom — where it could unfold with the least interference — has been the area that lies above normal utilitarian requirements. This is the space that floats over our heads, lying beyond the reach of our hands. It is here that the fullest freedom is granted to the imagination of the architect.

In two words, we are talking of the *vaulting problem.*

At a certain stage of its development, each civilization has solved the vaulting problem in a way that has expressed its own emotional ideas. Fundamental forms were evolved like the dome and the barrel vault — both based on massive construction; or the cross rib vaulting, based on a skeleton framework. The same form could be very differently handled (the Pantheon, the Byzantine Santa Sophia, or Michelangelo's Saint Peters), *but each civilization was able to find a solution which expressed its emotional convictions.*

What will be our answer to the vaulting problem? There is no certain answer. It is not possible to foretell, but a few signs do exist which point the direction in which we are moving.

We are sometimes compelled to recognize today, as in the nineteenth century, that the possibilities for solving the vaulting problem offered by the structural engineers can provide the stimulus to push the architect into new spatial adventures. But it seems that these possibilities are moving faster than the imaginative power of the architect to give them a symbolic human significance.

The space frame, as it has been developed in recent years by the engineers, uses the principle of equilibrating all forces within the vault itself, so that it can be

given any form — concave or convex — and can move in an eternal flow.

How such forms will be developed will depend on the imaginative power of the architect. The essential features are the expression of lightness and of the movement of forces, with no interruption from too aggressive structural members.

Archeologists lately have again raised the question about the forming of the great vaults in antiquity. Greece and Rome have been opposed by comparing the Parthenon and the Roman Pantheon of Hadrian's time. The contrast between the Greek conception of laying all stress on sculptural forms and the Roman conception of molding interior space has been explained as being rooted in two different conceptions of the neolithic period. The Greeks delighted in sculpture, their Hermes statues, and their columns. The Parthenon has been explained as the most brilliant expression of the male patriarchal conception of life.

The immense dome of the Pantheon, 120 feet, is carried back to another tradition, to the veneration of the earth mother, and is related to the rock temples of the holy island of Malta, "the most complete surviving expression in stone of neolithic abstract vision." One cannot prove exactly that the origin of the vaulting problem stems from the cavern and its sacred places in the paleolithic period, yet we know today that fertility was to a large extent identified with the hollowed-out earth, and the temples of Malta, half hollowed out of the rock, half standing free, were also devoted mainly to the earth goddess. Their vaults were partly corbelled. Each stone course overlapped the one beneath, just as the layers of brick in the dome of the Pantheon.

But the vault slowly changed its significance during the Roman Empire, as in the Pantheon devoted to all the gods. Unlike the motherly world cave, it seems to symbolize the space above the earth, perhaps the world space, as its eternally open eye in the crown of the dome indicates. The coffering of the dome was covered with gilded bronze. This was the beginning of a complete change in the significance of vault and dome. In Byzantine architecture and up to the present day, the sphere of the vault has been identified with the transcendental realm of heaven and god. The dome becomes the prevailing vault during Byzantine architecture, sculpture disappears, golden mosaics indicate a heavenly scene.

A curious link leads from the domes of the Arabic world to our own striving for the solution of the vaulting problem. Both intend to eliminate heaviness and to reduce the amount of material as much as possible. The Arabs, maybe because of a mobile heritage, liked lightness, slim dimensions, and in the vaulting of their small domes they invented reinforcing ribs, the binding arches which they made spring so keenly from one support to another. The Mihrab, the chapel giving orientation to Mecca in the Mosque at Cordoba, shows how the Arabs had developed a forerunner of the space frame construction long before the ridge ribs of the Gothic cathedrals.

The keenest constructor of late Baroque churches, *Guarino Guarini*, poses the lantern on the binding arches of the dome of San Lorenzo, Turin, 1668–87. The intersecting arches form a fantastic perforated eight-pointed star on which the lantern rests. The same principle as the Mosque in Cordoba, but now transposed into daring dimension. The intention of Guarini was to satisfy by architectonic means the Baroque feeling for mystery and infinity. The Baroque period felt strongly attracted to constructions defying the force of gravity and awakening the impression of spatial infinity. Mostly this was done by painting. In San Lorenzo, purely architectonic means are used to defy gravity. No later architect dared to follow the precedent Guarini set in this church. The dome of San Lorenzo presents the case of an architectural vision that uses the structural resources of its age to the utmost limit. Today, the situation is just the reverse. For a century there have been more construction possibilities than were absorbed by architects.

The next step from Guarini's space-frame dome in San Lorenzo leads to Pier Luigi Nervi. Maybe his Festival Hall in Chianciano, Italy, cannot be compared with the finesse of Guarini's perforated space, yet the principle of composing a dome of simple prefabricated elements which can be assembled in a new and fantastic way, has been acted upon by the 20th century engineer.

Industrialization and the vaulting problem of this period are inextricably interwoven. Curtain walls and egg-shell skin-vaults have taken the place of the massive structures of former periods. Even in the field of engineering, there is a tendency for ever lighter structures. There is a remarkable difference between the 19th and the 20th century approaches to the problem of wide spans. The 19th century engineering found its apex in Cottancin's "Hall of Machines" at the International Exhibition, Paris, 1889, which, by means of its three-hinged arches, achieved for the first time a free span of 115 meters.

Today, we are on the way to replace heavy trusses by small prefabricated members, each of them forming a part of a space-truss and being themselves spatial structural elements. It would have been impossible for the 19th century to build the enormous cantilevered hangars which Konrad Wachsmann has designed.

The tendency to achieve lightness, less weight and greater flexibility in the forms of vaulting appears also in ferro-concrete structures. Great engineers, like Freyssinet and Maillart, have built in the Twenties their egg-shell vaults; Freyssinet in the locomotive sheds at Bagneux, near Paris, 1922, where the egg-shell thin reinforced slabs can nearly be bent like cardboard.

Maillart's parabolic barrel vault of the Cement hall, Swiss National Exhibition, Zurich 1939, is of extreme thinness (2 inches), and touches the unsolved vaulting problem of our period (pictures in Space, Time and Architecture, 9th edition, pp. 402/403).

Maybe the first realization of this idea is to be found in the German architect Bruno Taut's Crystal Pavillion, Exhibition of the German Werkbund, Köln 1914. Even before the engineers, Bruno Taut develops a fantastic dome with a kind of rudimentary space frame.

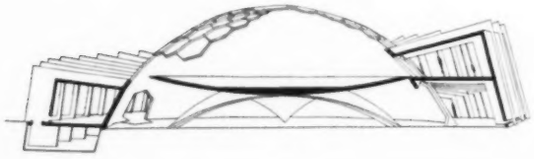
These are only a few possibilities handed to the spatial imagination of the architect. The overall tendency is lightness, spatial flexibility. Will the architect be able to use the structured possibilities? Anyway, we are on the way.

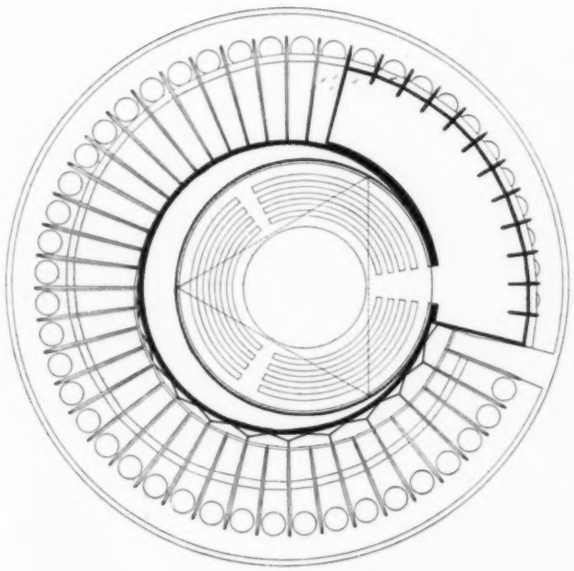
Already a line can be traced towards a solution from different and often unexpected sides. In this direction lies Naum Gabo's scheme for the Soviet palace competition of 1931. Here an artist, a sculptor, is the first, as far as we can see, to conceive two halls — an auditorium for 15,000 and a theater for 8,000 — like two enormous shells where ceiling and floor mirror each other and are drawn into continuous movement. Perhaps it could not have been realized in 1930, but now it could, and the stadium (1952) of Catalano, taken up from the ground and floating in space, having the sky as its counterpart, could be realized immediately. Catalano the architect, Le Ricolais, the excellent mathematician-engineer, and other collaborators, have proposed for this project three different kinds of space-frames out of prefabricated parts.

After the Russian Naum Gabo, Frank Lloyd Wright's project for the club house for Huntington Hartford, Hollywood Hills, California, is based on a similar spatial conception. Is this "International Style"? Certainly not. Two artists are touched independently by the stream inherent in our age.

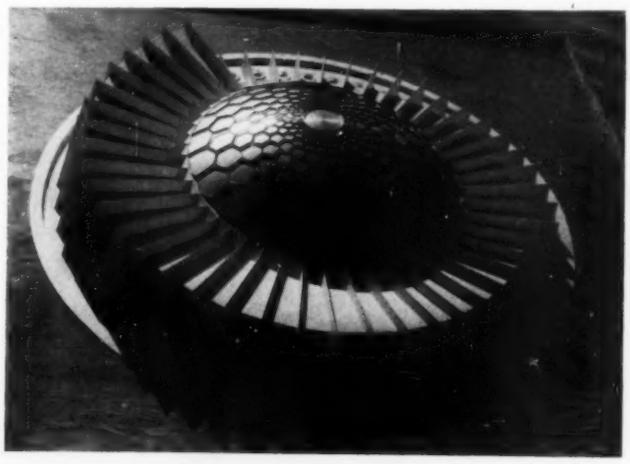
In schemes of the youngest generation, as the light dome for a California foundation by Pafford Keatinge Clay, the same tendency of combining an organic and geometrical, an emotional and a rational approach is reflected again.

The vaulting problem is certainly not the main factor in creating a community life. But the moulded sphere above the head always gives a decisive stimulus to the places where the community gathers for religious or political reasons, for a music festival or for theatrical performances. It is not the creation of an all-embracing sphere which changes immediately a chaotic crowd into an integrated community, but it is its foremost symbol. The Gothic prayers have long vanished; but the cathedrals still remain as their silent witnesses.





13



13. Paffard Keatinge Clay: light dome for the Carl Cherry Foundation, Carmel, Cal. "The building is for experimental forms of performance of music, dance and light. This project of an architect of the younger generation shows a tendency which goes through present-day architecture, combining an organic and geometrical, an emotional and a rational approach."

PLANNED FOR CHILDREN

The Frederic Wieting House,
Swampscott, Mass.

Carl Koch & Associates, Architects
Frederic L. Day, Jr., Associate
John F. Carey, Contractor

THE PROBLEM OF PLANNING living and growing-up space for four children under six as well as for an older son who pays frequent visits was a basic requirement of the program; important also was to provide for easy control of the children's area from the kitchen and space for the parents' privacy, as well as facilities for undisturbed adult entertaining. A one-level scheme was a further request of the clients.

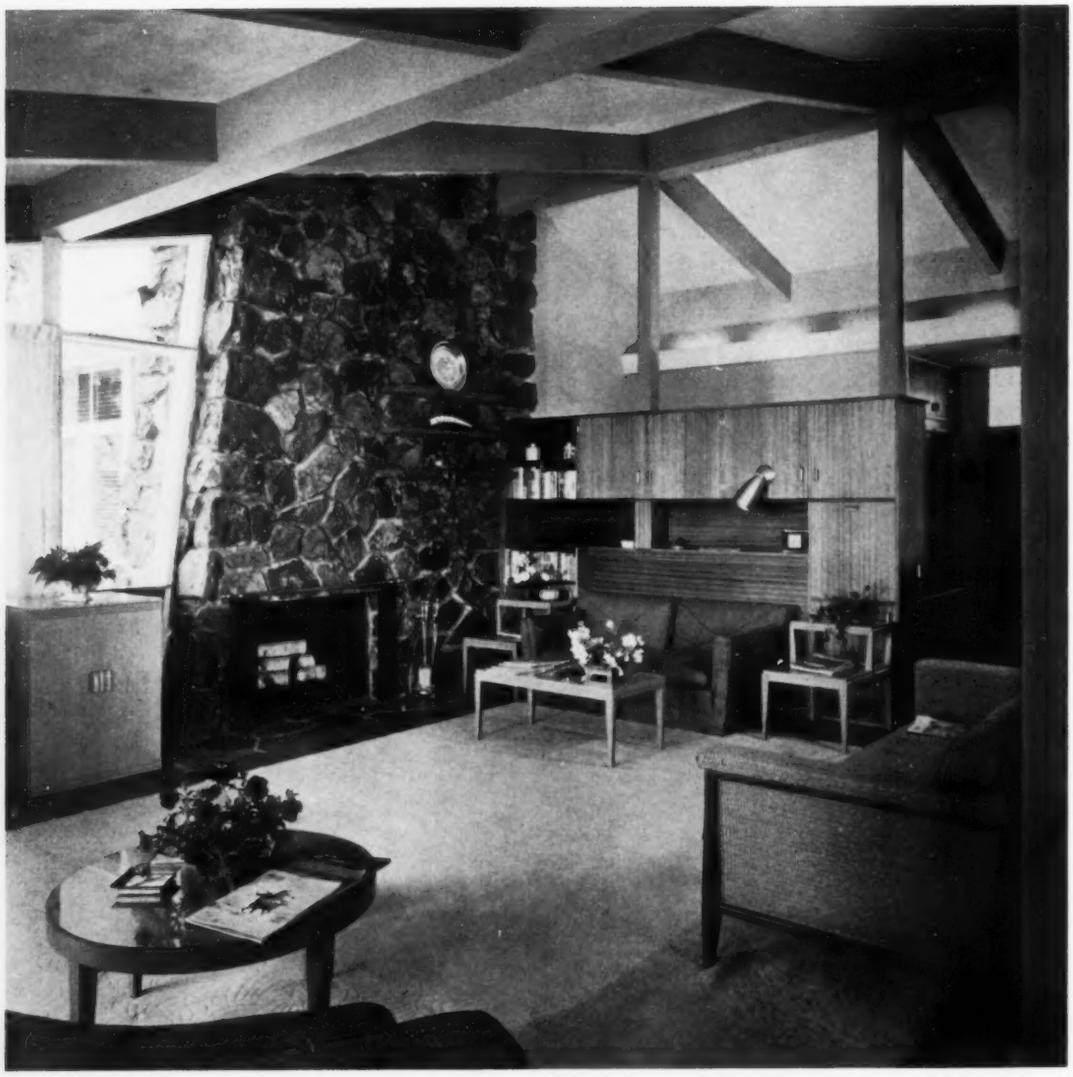
The plot commands a sweeping view of the ocean to the south and east and is less wooded, more suburban in character than architect Koch had encountered before. Since the terrain sloped gently south to the sea and was bounded west and north by streets, it was decided to place the house broadside to the view with access to the garage from the west.

Initially one parent favored a modern design while the other was opposed; even to a conservative version. The house as built has a pleasing character that incorporates many of the best aspects of both schools, and has completely won over the dissident partner.

The principal façade, which opens south to the view, is shown above and at right. Some exterior walls are vertical natural cedar siding; others are painted cinder block. Thick-butt asphalt shingles protect the roof. Photo at left looks from terrace into the jalousie-sheltered dining porch

© Ezra Stoller

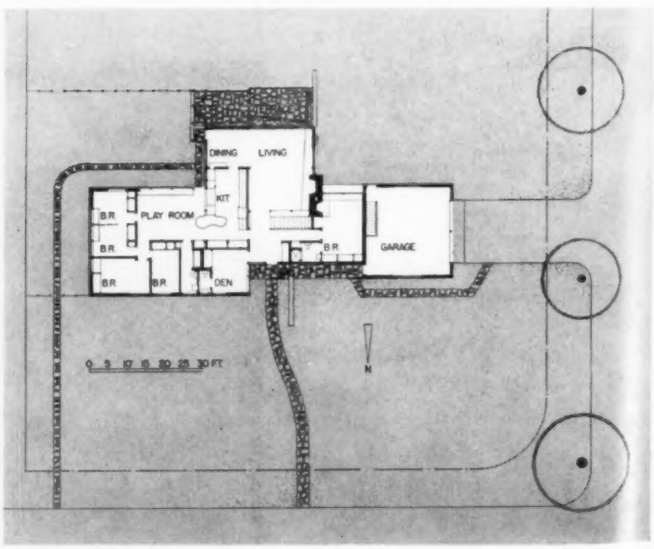
THE WIETING HOUSE



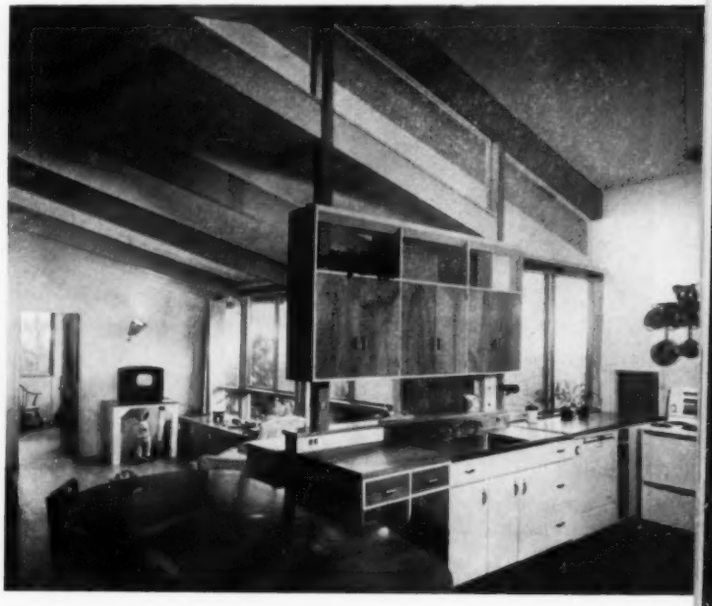
© Ezra Stoller

View of living room looking towards entrance hall, above. The free space about the two-sided storage unit separating living room and stairway visually expands the otherwise small entry

The plan might be described as a "corridorless" one which revolves about the playroom-kitchen-laundry-family dining area which serves as a center for control and housework and also as a main passage. The small basement, required by the owner, worked out well, and this experience has led the architect to favor basements as a practical solution for storage, shop, or even living space; provided the terrain has a natural slope



Normally the entire family gathers around the built-in table in the kitchen-laundry-playroom area at mealtime, and the adult dining room is used principally for entertaining guests. The playroom is oriented south to the ocean view and opens directly upon the childrens' play area, visible from the kitchen. Glazing in the high gable provides additional natural light



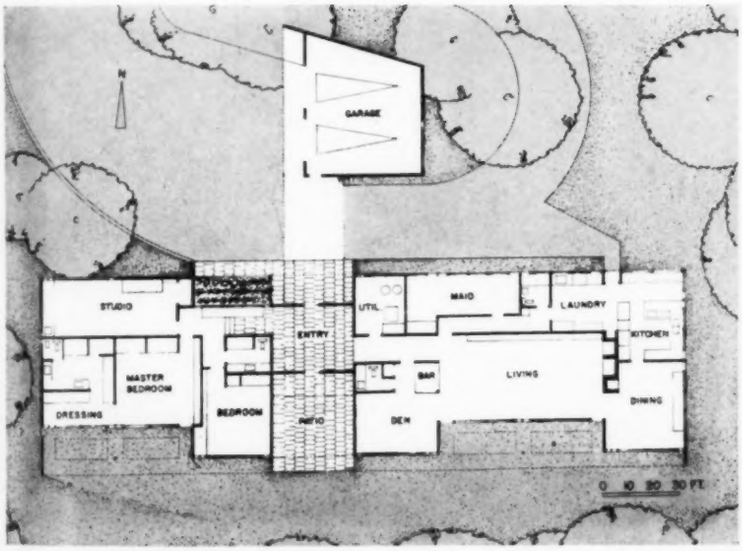
Bedrooms for the two boys nearly of an age are divided by a flush wood sliding partition, below at left. The master bedroom, below at right, is oriented south with lateral protection for quiet and privacy provided by the living room wing, and is located at the minimum distance from the children's wing necessary for seclusion. Stock sliding aluminum windows

Hedrich-Blessing

ZONATE PLAN YIELDS AMENITY IN LIVING

The Sigmund Kunstadter House, Highland Park, Ill.

George Fred Keck and William Keck, Architects
Marianne Willisch, Interiors
Raymond M. Hazekamp, Landscape Architect
Walter J. Olson, Builder



WINNER of the 1953 Honor Award for the Best House Design, Chicago Chapter, A.I.A., this suburban home captures a measure of the graciousness many have come to associate with older houses and combines it with the more informal, open character typical of today's plan. After stepping from his car under the porte-cochère which links house and garage, the guest enters a large, glass-enclosed central hall from which he may be received in the studio-library for quiet talk, in the living area for a family or party visit, or may be shown directly to his guest room (normally the den) to freshen up before making an appearance.

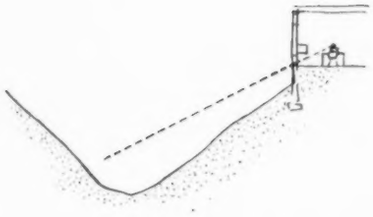
At first glance the rooms appear to be rather freely disposed in plan, with interesting "ins and outs" for the long façades, but closer analysis reveals a studied arrangement which places these elements within a rectangular structural cage consisting of eight uniform bays. Note how this rectangular form is maintained by an unbroken fascia on posts which continues even where the garage walk roof slides under it.

The four plan zones (car maneuvering and garaging to the north; living, dining and entertaining to the southeast; service and utility to the northeast; quiet study and sleeping to the west) are articulated with and arranged about the central hall to provide: proper entrance, exit and service; convenient interplay of elements and flow of space for desired privacy without isolation; informal living without confusion

Hedrich-Blessing

Wood is used for the exterior and much of the interior finish; straight grained cedar with a modicum of pigmented paint in the preservative so the grain and tone are revealed but uneven interim discoloration is prevented. Other interior walls are white plaster. Ceilings are acoustic plaster. Floors in important areas are cork; in other areas vinyl; in the entry slate. Large fixed sash are double-glazed; the ventilators consist of weatherstripped inside doors, fixed screening and wooden louvers. An interesting feature is the large masonry mass, limestone faced, containing living and dining area fireplaces and also an incinerator which is fed from the utility room.

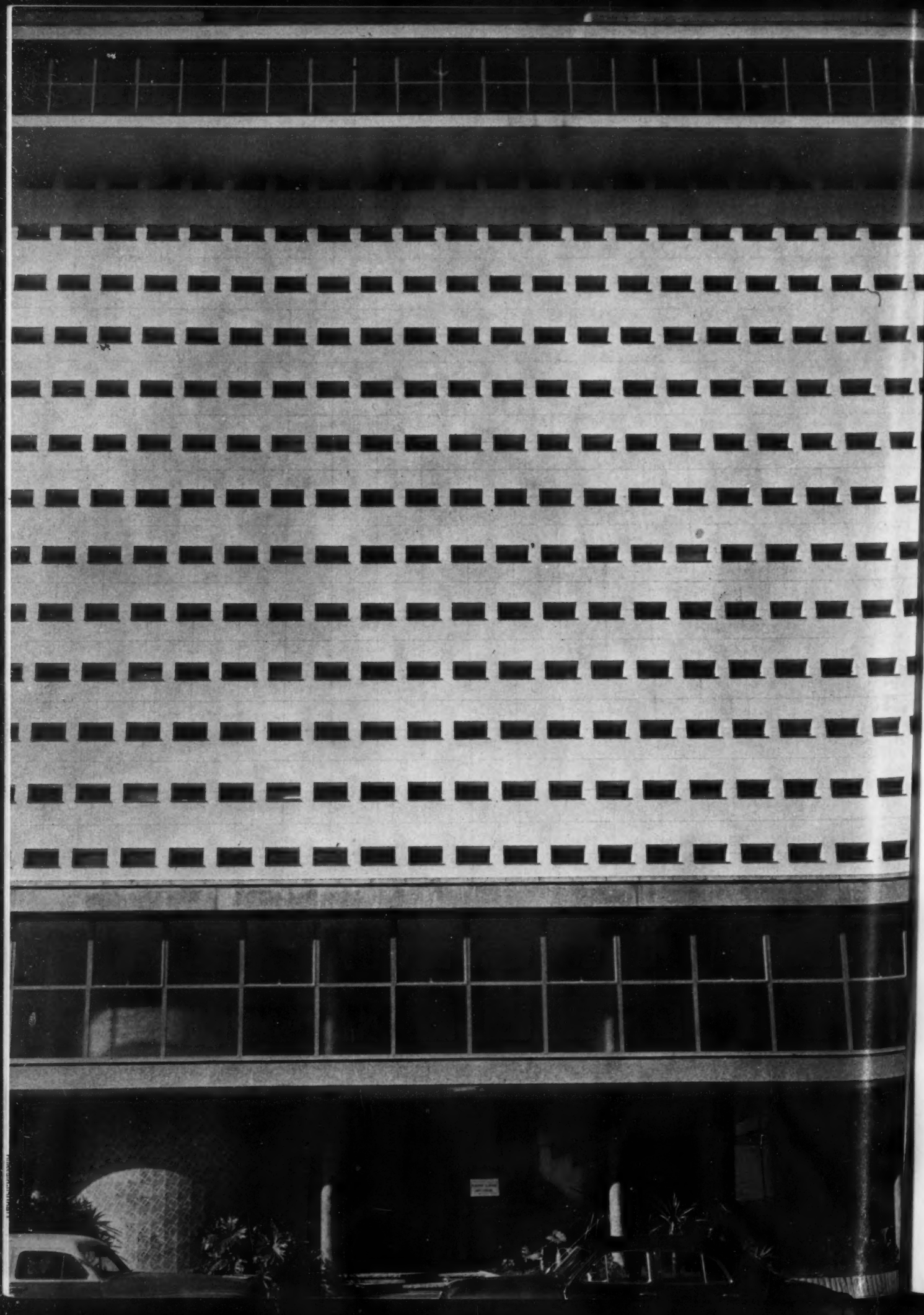
The large entry, left page, is a focus for the entire scheme. View of living area, above, looking over the built-in sofa towards the den-guest room, bar and entry. The bar is concealed by a vertical sliding panel (shown raised in these pictures). Architect-designed suspended lighting fixtures house continuous tubes as well as a trolley duct for spots to highlight owner's paintings



The glass panels below the dining room cabinet, left, provide a view into the wooded gulley to the east. The lower photo shows the kitchen area and space for informal eating beyond the cabinet

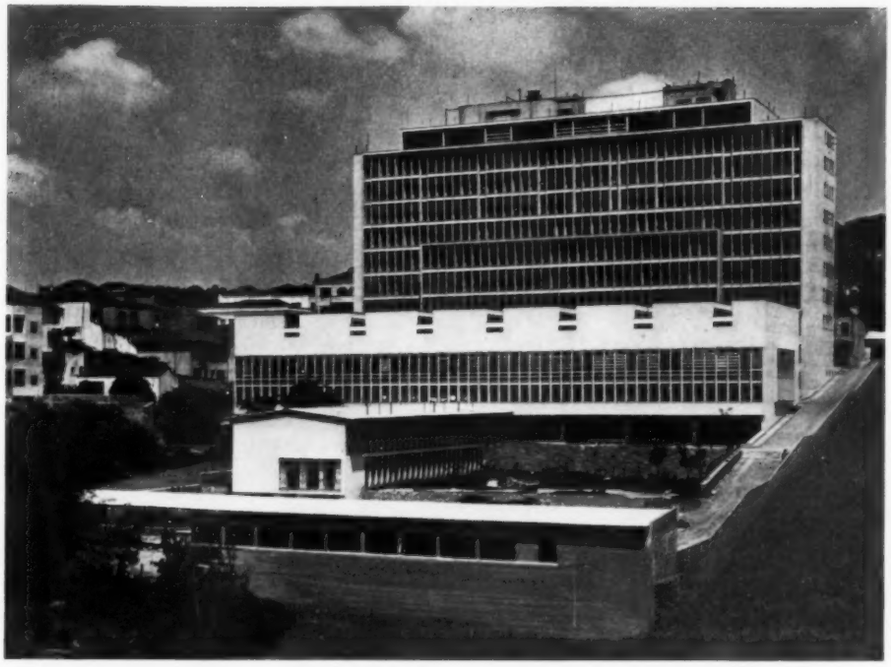
The manner in which the principal rooms relate to the outdoors and to the sun and seasons was an important consideration in the design. Large transparent walls for these spaces that open to the south are sheltered by both overhangs and extended solid vertical planes to give from within both openness with privacy and a strong sense of protection

Master bedroom, top photo, features a headboard designed by the architects, as well as a long wardrobe closet (not shown). The opening leads to the adjoining dressing room and bath, shown in the center picture. The L-shaped, plastic-topped lavatory counter contains two units and is both backed up by and flanked by long wardrobe units. There is also a stall shower, tub, and an enclosure for toilet and bidet. The bottom photo pictures the studio-library, which is oriented to the north for good light. The lower cabinet against the far wall contains both a sink and storage



Hospital Antonio Candido de Camargo

Rino Levi
Roberto Cerqueira Cesar
Architects

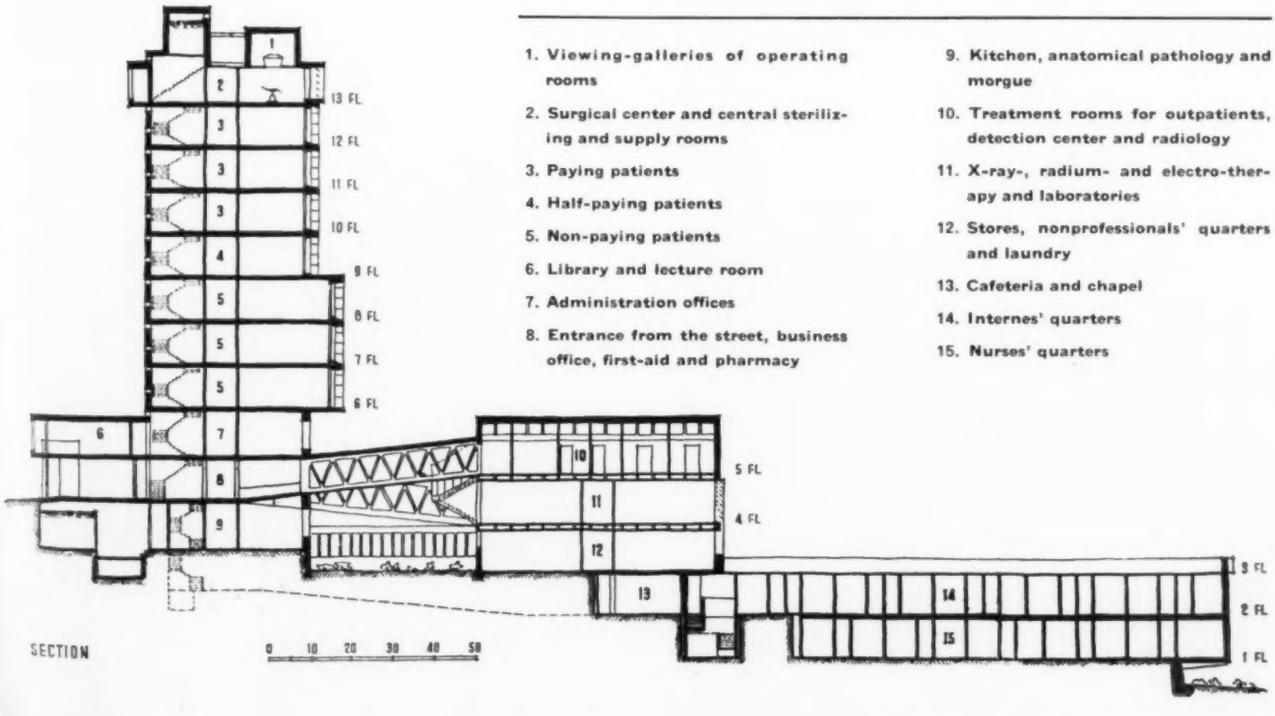


F. C. Schier

INSTITUTO CENTRAL DO CANCER, SAO PAULO

PARTICULARLY INTERESTING in an altogether interesting South American hospital are two opposed expressions in fenestration — full glass on the north (sun) exposure, two small windows per story on the shady side, one at eye level, the other at the ceiling. The device adds variety to what is essentially a slab building. Fenestration is also important in the differing expressions of other buildings — the diagnostic unit and the residential building. As a hospital the group presents notable differences as compared to North American practices, especially in segregation of patients according to capacity to pay (fuller discussion and plans, ARCHITECTURAL RECORD, Feb., 1950).

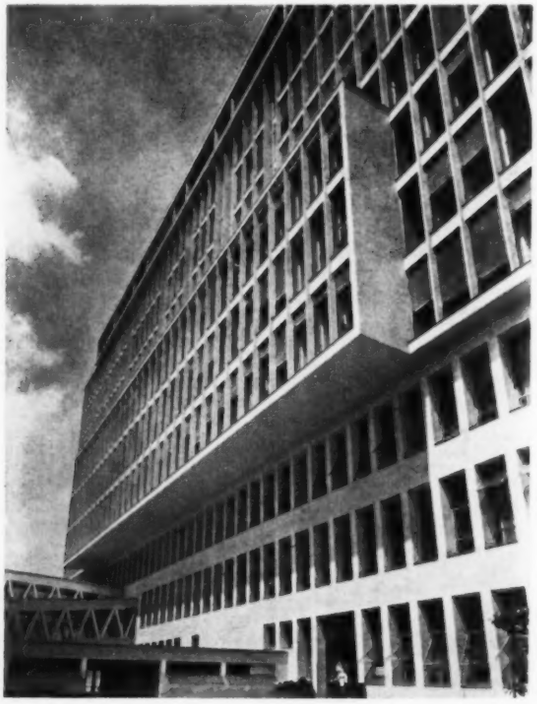
1. Viewing-galleries of operating rooms
2. Surgical center and central sterilizing and supply rooms
3. Paying patients
4. Half-paying patients
5. Non-paying patients
6. Library and lecture room
7. Administration offices
8. Entrance from the street, business office, first-aid and pharmacy
9. Kitchen, anatomical pathology and morgue
10. Treatment rooms for outpatients, detection center and radiology
11. X-ray-, radium- and electro-therapy and laboratories
12. Stores, nonprofessionals' quarters and laundry
13. Cafeteria and chapel
14. Internes' quarters
15. Nurses' quarters



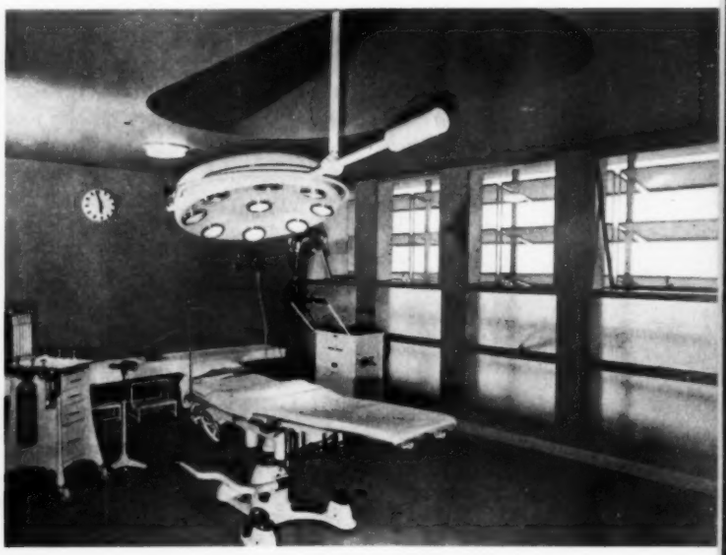
Above: three-story building houses radiology department, detection and treatment center for both inpatients and outpatients. Landscaped terrace makes attractive entrance for nurses and doctors and other employees

Below: Projecting wing on south side (left) houses entrance lobby at street level, library and auditorium above. Cantilevered portion on north side (right) contains three-bed wards used largely for charity patients

P. C. Schler



Contrary to the practice in North American hospitals, the main entrance here serves for all patients, also for office workers. The spiral staircase leads to auditorium, library and cancer association offices. Lobby handles large outpatient load



The small windows, two rows per story, usually occur in service or treatment rooms (treatment room above, left). Full-height windows, on opposite side, are usually for patients' rooms, but appear also in operating rooms above, right

This series of articles is intended to orient the reader to the language and basic design concepts used in planning electrical systems for office buildings, industrial plants, schools, hospitals and stores. Article 1 deals with general principles applying to all types

BASIC ELEMENTS IN THE PLANNING OF ELECTRICAL SYSTEMS

By Felix B. Graham,
Syska & Hennessy, Inc.

Article 1

TAKE AWAY THE ELECTRICAL POWER of a large, modern building, and it is, for all practical purposes, inoperable. Not only would there be no artificial lighting for seeing, but the heating and air conditioning, communication systems, elevators and machinery all would stop working. This illustrates that, during electrical planning, reliability must be weighed with such other factors as safety, flexibility and expansibility, initial cost, ease of maintenance, appearance and space requirements.

But not all of these qualities can be had in equal proportions: the greater the flexibility, the more costly the system; the more reliable the system, the more the space that is required; and finally, the more inexpensive the installation, the more trouble the system is to maintain.

The relative importance of these features will be considered in detail in ensuing articles as affected by the needs of different building types.

Basically, electricity is used in three ways: (1) lighting, (2) power and (3) communications. Just how the electricity reaches the equipment it serves safely, economically and reliably is discussed below.

Interior Distribution

Power from the utility is brought to the main switchboard through service switches. Current then passes through main switches and circuit protective devices such as fuses or breakers to the feeders and risers. Each of these is protected by a fused switch or breaker, and supplies at the other end one or more distribution panels.

In the panels the current is further distributed among smaller circuits (called branch circuits) which supply the outlets. This, briefly, is what is known as the *simple radial system*.

There are many factors to consider in the selection of the proper type of distribution system. Included are floor area, height and type of building, type of occupancy, possibility of future expansion and whether the electrical loads are evenly distributed or concentrated in certain spots.

If the building is not over 200 ft in any horizontal dimension, and is not over 20 stories high, and has a fairly well distributed load of average density, the most economical system is likely to be a single transformer or a single group of transformers. But if there are a large air conditioning plant and elevator motors on the roof, it would probably be best to install a second transformer or group of transformers close to the load concentration.

Where buildings have large floor areas or are more than 20 stories high, additional groups of transformers might be installed in the basement of a large, low building or on some of the upper floors of a tall building.

Feeders should rise in a building so that there will be a sufficient number of distribution panels on each floor. Generally, it will be found more economical to provide several panels with fewer, short branch circuits terminating at each, rather than to have one or two panels with numerous, long branches. If there is a power failure in one feeder, then fewer branch circuits will be affected.

Feeders may consist of either wire in conduit or enclosed busway. Cost or space conditions will dictate one method or the other.

Long runs may result in excessive voltage drop unless conductors are oversized. However, since the cost of the feeders represents a large portion of the total electrical system cost, unreasonable oversizing must be guarded against. On the other hand, future requirements should be anticipated, all of which points to the necessity for a careful analysis of feeder design.

Switching of lighting circuits should be given a good deal of thought. It is necessary to analyze the type of occupancy and the flow of traffic to lay out a satisfactory switching arrangement. Partial illumination should be provided for cleaning periods. Some lights at strategic locations should be left operating at all times for security reasons and for lighting the way to elevators and stairs. Exit and stair lights should be on circuits segregated from all others.

Circuit Protective Devices

The current capacity of a conductor depends on its size and insulation. There are two common occurrences which impress greater than rated current upon a conductor: (1) overloads, caused by connecting more load to the circuit than the circuit was designed for, and (2) short circuits.

A fuse opens a circuit when a current greater than the fuse rating melts the link. The greater the current, the faster the action. Due to the inrush current upon starting a motor, fuses in a motor circuit are oversized 250 to 300 per cent. Thus, they cannot serve as overload protection, but only as short circuit protection. Overloads on motor circuits are cleared by thermal elements

SOME PRINCIPAL

Westinghouse photos

Low-voltage side of three 1000-kva transformers, showing network protectors

usually built into the motor controllers.

Fuses are generally combined with a circuit disconnecting device — a switch — in one enclosure. Since fuses emit heat when carrying current, and since their enclosures restrict heat dissipation, it is recommended that they be loaded to not more than 80 per cent of their rating.

Circuit breakers, switches, relays, contactors and other electrical devices cannot be used to their rated capacity because devices are rated in open air, making no allowance for heat trapped in enclosures.

The knife switch is a manually-operated disconnecting device. Its action is therefore slow. When it is opened it draws an arc which may harm equipment and operator. Its danger increases as the operation becomes slower and the current greater.

The circuit breaker combines the function of switch and fuse into one unit. It will trip — that means open, thus clearing the circuit — automatically upon overload or short circuit. The tripping time can be adjusted on the larger breakers, permitting a selective system wherein the breaker nearest the fault will trip first, without taking other feeders out of service. The tripping action can be initiated manually, or electrically on the large breakers. The contacts open quickly. The arc which is created is at once extinguished in an arc chamber. There are no fuses to be replaced in a circuit breaker which is an advantage for maintenance.

Since the circuit breaker has moving parts, it is recommended that it be tripped and closed occasionally, preferably once a month, to check operating condition.

Lighting

Lighting, if well designed, contributes in great measure to the successful operation of a building. If, poorly designed, lighting detracts from an otherwise fine structure.

To be successful, a lighting installation must produce light in sufficient quantity and of good quality. Footcandle intensities range from ½ ft-c on a parking lot to 2000 ft-c on the operating table.

Equally important, or possibly more, is quality of light. Quality includes: (1) even distribution, (2) absence of glare, (3) low brightness contrast, and (4) good color rendition.

Even distribution is achieved by spacing lighting fixtures in proper relation to their height above the working plane, and results in absence of disturbing shadows and in uniform illumination intensity.

Glare is caused by an exposed light source (direct glare) or by reflection of the light source from shiny material (reflected glare).

Direct glare can be reduced by concealing the light source from normal view by recessing, shielding or diffusion, or a combination of these. Reflected glare can be minimized by diffusing panels or lenses, and by the use of a minimum of shiny material.

In good practice, the contrast in brightness between task and adjacent areas should not exceed 3:1, between task and remote areas 10:1.

Unplanned lighting has resulted in brightness contrasts of 100:1 or even 1000:1. Such extreme contrast is not only uncomfortable and tiresome, but it can cause irritation.

Good color rendition requires close coordination between type of lamp and room color scheme. The appearance of the occupants' facial colors and the general atmosphere created should be carefully considered.

The relation between power consumption and lighting intensity has some interesting aspects. With a fluorescent installation, 1 w per sq ft will result in about 12 to 18 ft-c; with incandescent 1 w per sq ft will produce about 5 to 8 ft-c. Thus to obtain 45 ft-c throughout a building of, let us say, 100,000 sq ft requires about 300 kw installed capacity for fluorescent lighting or 700 kw of incandescent lighting.

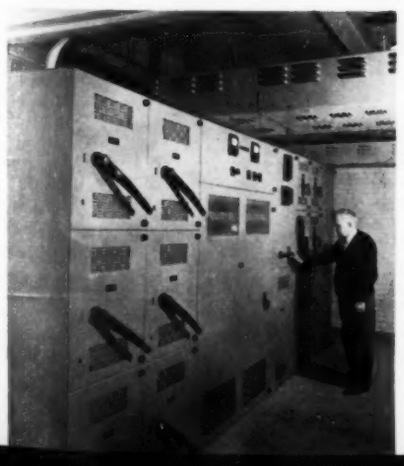
Likewise, with incandescent lighting the capacity of air conditioning equipment must be increased to remove more heat.

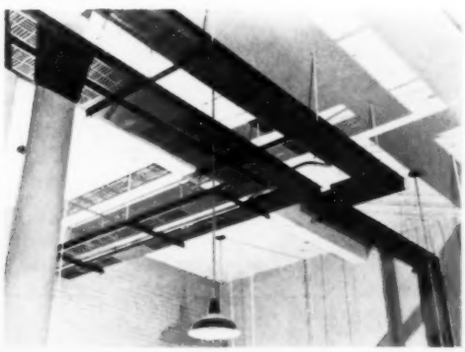
Fluorescent lamps come in 2, 3 and 4 ft lengths. They require starters and ballasts, which can be troublesome items, if not of good quality, raising the maintenance cost of a building and creating a nuisance. A recent development consists of starterless, rapid-start lamps which come to full brightness within 1 second. Slimline lamps are starterless, instant-start fluorescent lamps available in 4, 6 and 8 ft lengths and with several operating current ratings.

Both types of lamps are available in many different colors, the most popular of which are standard warm or cool white, and deluxe warm or cool white. Deluxe lamps contain a far greater percentage of red in their spectrum than standard lamps resulting in better rendition of facial colors or any object containing red.

COMPONENTS IN A DISTRIBUTION SYSTEM

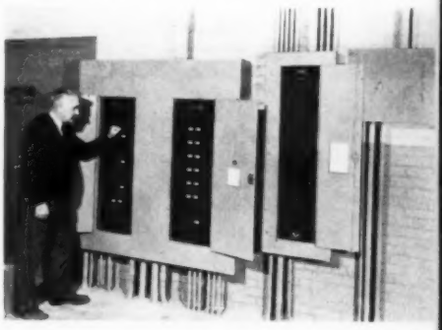
Low-voltage distribution switchboard





Bus duct runs in ceiling of equipment space

Three lighting and power panelboards



Although deluxe lamps produce less light than standard lamps (due to the nature of the coatings), there are many applications where they should be used to obtain best possible color rendition.

Incandescent lamps are rated either 115, or 120, or 125 volts. It is important to use the correct voltage rating, for this reason: If a lamp is used at higher than rated voltage its light output increases but its life decreases rapidly. If used at lower than rated voltage its life span increases at the expense of light output.

Light output of incandescent lamps is affected by voltage fluctuation. A dip in voltage of 1 per cent results in 3½ per cent dip in light output, which becomes greatly annoying if the dip occurs frequently or regularly. Fluorescent lamps are also affected, but slightly less. Motors, except the smallest ones, should be kept off lighting feeders to minimize voltage fluctuations.

Lamps are installed in fixtures to control brightness and distribution. Light fixtures can be recessed, ceiling mounted or stem suspended if ceilings are sufficiently high, or installed in coves. Area lighting with luminous, louvered or baffled ceilings is gaining in acceptance. Luminous ceilings, either of plastic or glass, present the closest approach to daylighting and are particularly suitable where high intensity, low brightness, glare-free lighting is desired. Care must be taken to obtain approval for plastic luminous ceilings as some types of plastic may present a fire hazard.

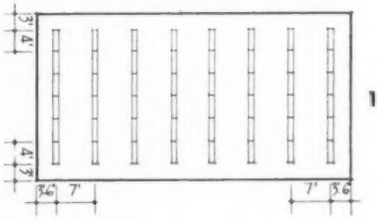
BASIS FOR TABLE CALCULATIONS

The purpose of this table is to point up certain characteristics such as light output, light distribution, fixture brightnesses, installation cost, and—a very important one—fixture efficiency. The latter is expressed here in terms of foot-candles per watt per square foot of floor area.

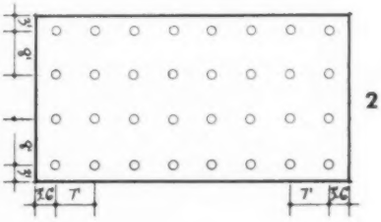
Calculations are based on an example room shown in ceiling plan 1 (for fluorescent) and plan 2 (for incandescent). If any fixture in the table is spaced according to locations in these plans, light distribution at working height will be uniform for the whole area at the foot-candle intensities listed in the table. To demonstrate the effect of eliminating half of the fixtures see plans 3 and 4. Plan 3 uses RLM fluorescent (fixture E) and plan 4 RLM incandescent (fixture K).

CHARACTERISTICS OF SOME TYPICAL LIGHTING FIXTURES

Example Room
56 by 30 ft = 1680 sq ft
Fixture mounting height = 10 ft
Ceiling—off white
Walls—light gray
Maintenance—assumed good



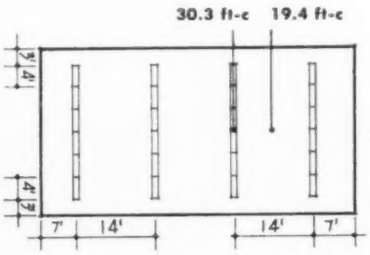
1



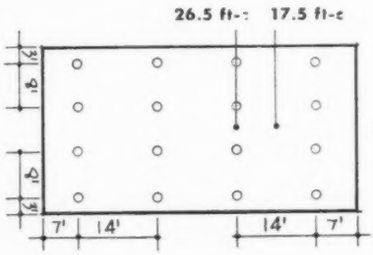
2

Fluorescent Fixtures
2-40 w, 48-in lamps
Wattage in plan 1 above, 4200 w total or 2.5 w/sq ft

Incandescent Fixtures
300 w lamps
Wattage in plan 2 above, 8400 w total or 5 w/sq ft



3



4

	Fixture Type	Distribution Curve
FLUORESCENT	A Recessed Louvered 45° Shielding	
	B Recessed Prismatic Lens (Holophane 9015)	
	C Semi-Indirect (Dense Plastic)	
	D Direct—Indirect	
	E Open RLM Reflector	
	F Bare Strip (2 lamps)	
	G Parabolic Reflector	
INCANDESCENT	H Opal Globe	
	I 3-Ring Indirect	
	J Recessed Louvered Reflector	
	K RLM Reflector	
	L Recessed Prismatic Reflector	
	M Bare Lamp	

Maximum Brightness (crosswise) of Fixture at 30° From Horizontal in Ft-Lamberts	Relative Installation Cost (With the fixture B assumed as 1.0)	Foot-Candles per watt per sq ft	Average Foot-Candles Maintained	Contrast Ratio Between Luminaire at 30° and White Paper on Desk	Remarks
580	.78	17.2	43	12:1	Suitable for low ceilings
335	1.0	17.6	44	7:1	Prismatic lens has low brightness.
170	.77	12	30	4:1	Has low light output, but low brightness makes it very comfortable. Needs fairly high, clean ceiling.
450	.91	17.6	44	9:1	Needs fairly high, clean ceiling.
575	.65	22	55	10:1	Good for industrial work. Better if reflector is white and is designed for some uplight.
1800	.46	22.5	56	34:1	Too much glare for constant work.
260	.86	17.2	43	3½:1	Very low brightness crosswise. Five times as much brightness lengthwise. On the whole makes a comfortable installation.
1100	.39	7.4	36	28:1	Too much glare for constant work.
320	.43	6	30	10:1	Very comfortable incandescent. Needs clean ceiling and silvered-bowl lamp.
510	.65	6.5	33	14½:1	Needs fairly high ceiling.
725	.43	9.8	48	14:1	Very efficient incandescent unit.
1,400 avg. 3,300 max.	.72	6	30	41:1 avg. 96:1 max.	Not as bright as figures indicate, since source of brightness occupies very small area. Still, not recommended for general office work. Good for high intensities in relatively small areas.
50,000	.24	9	45	1,050:1	Storage rooms and similar occupancies.

SCHOOL HEATING COMBINED WITH STRUCTURE FOR LOW COST AND COMFORT

AN IDEAL HEATING AND COOLING SYSTEM for schools must supply complete comfort, not just heating and cooling. In addition, according to the engineers the system should be an aid to health, with the following taken into account:

1. Adequate temperature control.
2. Humidity control.
3. Air filtration — freedom from dust and pollen.
4. Fresh air and ventilation.
5. Odor control.
6. Uniform temperatures from floor to ceilings, with warm floors especially important to kindergarten and lower elementary grades.
7. Uniform interior temperatures from outside walls to inside walls.
8. Germicidal treatment of the air.
9. Quiet operation.

In most schools, the initial cost of the system must, of necessity, be tailored to fit "tight" budgets, and operating and maintenance costs must be as low as possible with as little sacrifice of the above qualities as possible. Simplicity of operation is an important factor where unskilled building custodians are the general rule, especially in rural communities.

Ideally, too, an integration of the heating and ventilating system with the building structure will effect a reduction in the general building costs as well as the costs of the heating system. Integration would also permit the system to be concealed from view as far as possible, and take up less floor space.

Warm Air Panel Heating

One type of system that seems to offer a great number of these qualities — good integration and operation, compactness and low cost — has been dubbed "warm air panel heating" and employs both heated floor slabs and warm air introduced into the room. The slabs are warmed by passing warm air through the floor construction, then bringing the air into the room at the outside walls, below large glass areas. By introducing the warm air at this point, the natural cold down drafts from the glass are reduced and a layer of warm air is introduced between the cold glass and the room occupants, to prevent body radiation loss to the glass. Facilities for cooling and dehumidification can be easily added to the system.

Basic Components of the System

In such a system, the basic heat generating unit would be one or more large direct-fired, all steel, forced warm air furnaces. Each unit would have an integral oil burner capable of burning No. 5 oil for economy of operation (No. 2 oil could be used if desired), air filters, a humidifier, and a blower and blower motor. Induced draft fans would assure consistent, constant combustion and permit lower, smaller chimneys.

The furnace is located in a basement below the first floor level, with the rest of the building on grade. However, it is possible to install the system in a room on the first floor level. A 24 by 32 ft boiler room appears to be adequate for an elementary school, but the size is dependent to some extent on the boiler room location.

In general, the heated air would pass from the furnace bonnet through nonmetalic tubes, such as fiber ducts or pre-cast hollow-core concrete members, in a shallow trench under a double loaded class room corridor. Lateral branches, consisting of smaller diameter tubes, pass through the floor slabs of the classrooms and multi-purpose rooms to the outside wall of each unit. Warm air is then discharged vertically at the outside wall through long narrow baseboard diffusers or through registers at sill heights where the rooms are equipped with wall cases. Return air is taken back from each room via wardrobe closets, through the upper portion of the same trench under the corridor which carries the warm air pipes. The concrete trench itself serves as the duct. Some air is exhausted from each room through gravity roof ventilators over the wardrobe closets or lockers. The amount of air exhausted is equal to the amount of fresh air introduced into the room. Since each room is always under a slight pressure because fresh air is forced in, the gravity ventilators operate very satisfactorily.

Fresh air is introduced into the entire system by the same blower which circulates the heated air. The fresh air is then distributed to each room in accordance with a control system which supplies 10 cfm of fresh air per pupil when it is zero outdoors, and up to 100 per cent fresh air when the outdoor temperature rises to 60 F. Total air change in each room occurs every 6 minutes. At night, and over weekends, the fresh air dampers are closed and the blower operates intermittently at reduced speed.

Normally, the air filters at the intake to each furnace blower clean all fresh and re-circulated air about eight times each hour. Humidification is automatically added at the furnace, with controls in the return air duct. A glycol vapor is included to kill air-borne bacteria; the vapor is introduced into the suction side of each furnace blower.

Each classroom or multi-purpose room is equipped with a room thermostat for individual temperature control. If desired, more than one room could be controlled by one thermostat to reduce initial cost. Actual control is accomplished by manipulation of dampers (each classroom operates its own set) in the boiler room only, which vary the quantity of heated air, and thus the temperature of the air, delivered to each room. The total quantity of air delivered to each room is always constant so that ventilation and air move-

Heating system

designed by

Fred S. Dubin,

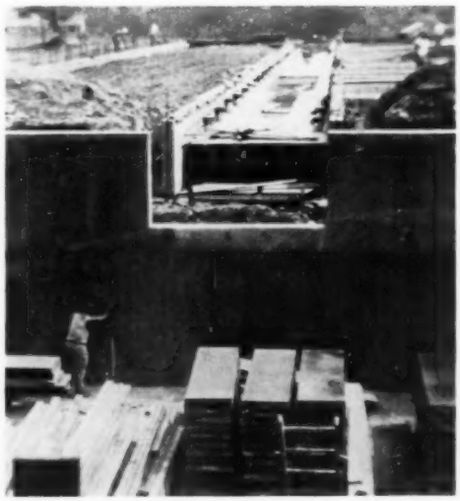
Consulting Engineers

ment is kept at optimum condition at all times. With such a set-up, pneumatic or electric controls can be used.

A Typical School Installation

An example of this type of heating system, illustrated on these pages, is being installed in the Colchester Elementary School now under construction in Connecticut. The school contains 34,000 sq ft, has 14 classrooms, a multi-purpose gymnasium, health facilities, administrative rooms, showers and locker rooms. The building is one-story slab-on-grade construction, and has two furnaces in the basement for flexibility of operation and economy of operation. One furnace normally supplies the classrooms and administration areas, the other serves the multi-purpose room. Both furnaces are cross connected so that either unit can handle the entire building alone in an emergency. The furnaces burn a cold No. 5 oil, without preheating. Furnace low limit control is set at 60 F.

The ducts in the floor were constructed of prefabricated round fiber



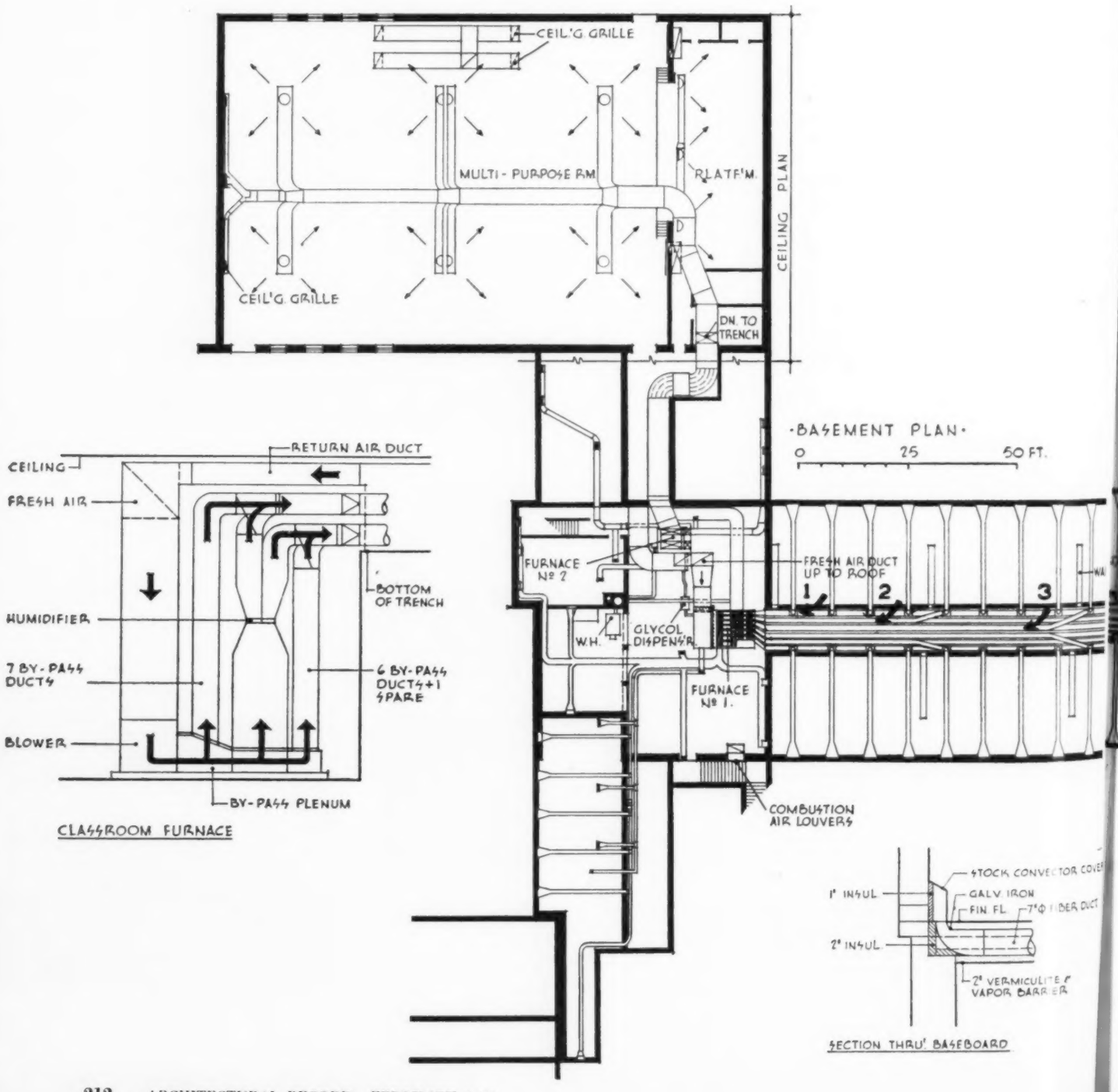
In the Colchester Elementary School, designed by Alfred Reinhardt, Architect, ductwork for the heating system was installed immediately after the footings were ready. A concrete trench under the central corridor was poured, then fitted with round fiber air-supply ducts set in vermiculite (photo near right). Elbow ducts are run from these supply tubes to smaller ducts, which will eventually be embedded in the floor slabs, and which feed to registers along the outside wall (two photos at top). Sufficient space is left above the ducts in the trench to permit its use as a return air duct (photo lower right)

tubes, which are said to be impervious to moisture, corrosion, and to be fire-resistant. Floor slabs are warmed to a temperature of 70 to 74 F, which is warm and comfortable, but not hot. The warm air which is ultimately discharged into each room is at a temperature from 70 to 120 F, depending on the weather. Velocities in the ducts are 900 fpm; vertical velocities from the room registers are about 250 fpm, enough to counteract down drafts.

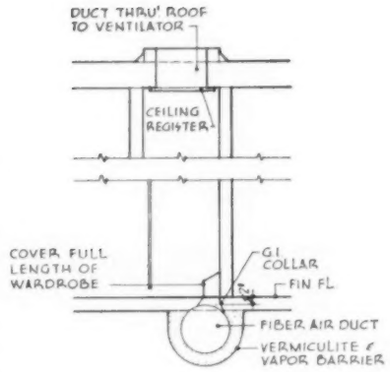
The individual supply ducts for each room, and located in the corridor trench, are 15 in. diameter, insulated from each other by 2 in. of vermiculite concrete poured between the tubes. At each classroom, 4 feeder ducts branch off from these main supply cuts and extend to the registers at the outside walls. The feeder ducts are 10-in. in diameter in the administration areas, 7-in. in the classrooms. In other schools in the kindergarten, smaller tubes, 3-in. in diameter, are used 2 ft. o-c to give more even floor heat.

The furnace blower is removed from the furnace and arranged so that by-pass ducts can be run between the blower and warm air bonnet. There are individual by-pass ducts, connected to individual warm air ducts at each furnace. Temperature controls are similar to the ones previously mentioned: upon a demand for temperature in classroom 1, for example, the room thermostat in that room operates a motor which positions dampers in the by-pass duct and bonnet duct for classroom 1, so that less by-pass air and more warm air from the bonnet is delivered to the room.

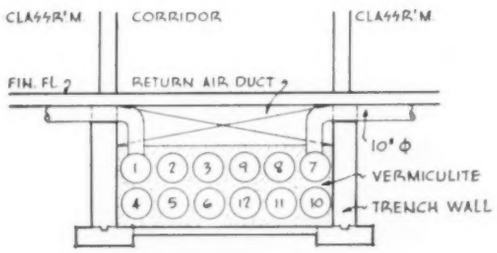
In another school, a variation on the above scheme was installed, using concrete members with a hollow core running from the corridor trench to the outside wall. The trench under the corridor carrying the warm air was



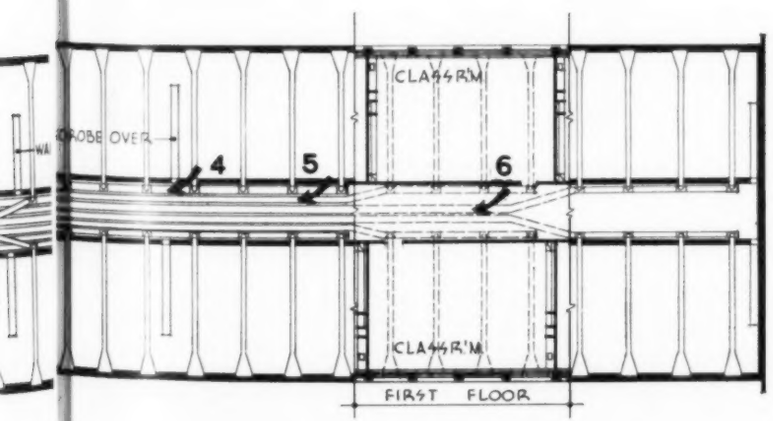
In the warm air panel heating system described here, the heated air leaves the furnace (detail lower left) and is supplied to the classrooms through ducts embedded in vermiculite in the trench under the corridor, as indicated in the plan below. The numbers indicate the classroom the duct supplies, and correspond with those in the corridor section immediately below. The air is then carried through smaller ducts to the registers at the outside walls, and returned through the wardrobes and fiber ducts (detail right) to the corridor trench, and back to the furnace to be mixed with fresh air and re-circulated

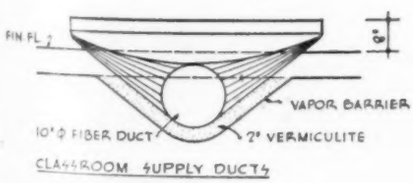


CLASSROOM RETURN AIR DUCT & GRILLE

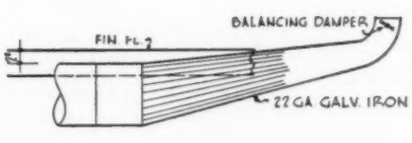


TRENCH UNDER CORRIDOR





CLASSROOM SUPPLY DUCTS



divided into 9 sections by inserting vertical sections of cement asbestos running parallel to the length of the corridor. The school contains 5 classrooms, with provisions for 4 more.

It is reported that warm air panel heating systems such as these can be installed for an initial cost between $1.10 and $1.60 per sq ft, depending on the extent of the controls, type of fuel used, warmth of floors desired, and the number of furnaces employed.

Advantages for the System

A great number of advantages have been claimed for the use of this type of system in classrooms. Among the more pertinent is its lower cost. This is principally due to the use of standard dimensioned materials, the elimination of shop-fabricated sheet metal and duct work for returns, and the use of the same system for both heating and ventilating. Furred corridor ceiling spaces, and dampers and air mixing boxes at each classroom are also eliminated.

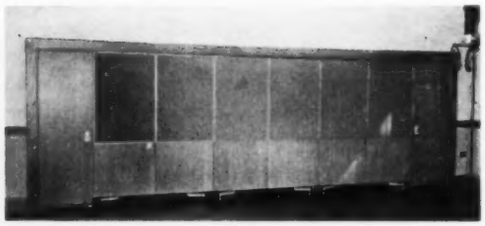
Since the ventilation air is brought through the system, warmed, filtered and humidified, no cold air with its attendant drafts and dust need be pulled through the open windows. In fact, it has been suggested that construction costs can also be lowered by reducing the number of windows that must open.

The system is simple in operation with fewer mechanical parts, less equipment, and can be installed with less labor than ordinary. A full time maintenance man is not required to operate or watch the system. The control system provides an adequate zoned heating supply, with constant ventilation.

The floor air system is also said to absorb sound, with noise confined to the heater room.

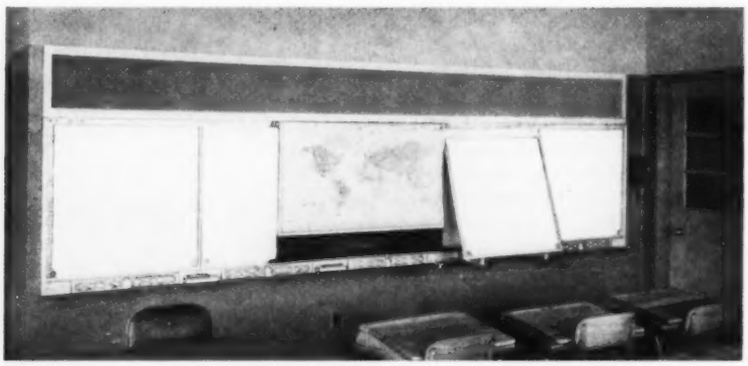
Construction apparently proceeds at a faster rate with this method of heating, since floors can be poured immediately after footings are in. The entire floor heating system in the Colchester School was installed in three days after the footings were ready. This is work exclusive of furnaces and boiler room ducts. It was suggested that a forced warm air panel system could be of great benefit during winter building for temporary heat, since the system can be installed very early during construction, and presents little danger of freezing in periods of time when a heating system normally receives very little attention.

A ROUNDUP OF CURRENT



1. Equipment Manufacturing Co., Inc.

WARDROBES, BLACKBOARDS HAVE MULTI-PURPOSE DESIGNS



2. New York Standard Blackboard Co., Inc.

STORAGE UNITS ARE FUNCTIONAL, FLEXIBLE

5. Adjustable Cabinets, Inc.

6. Lyon Metal Products, Inc.

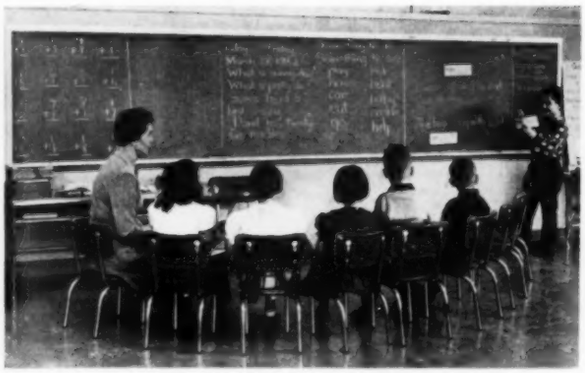
DESKS, CHAIRS HAVE STURDY CONTEMPORARY STYLING

8. The Brunswick-Balke-Collender Co.

9. William James Bargen

8. *Brunswick's* new teacher's desk has plastic or maple top, two-drawer pedestal; the lower drawer is standard file size. Pencil drawer and knee panel are optional. **9.** *Bargen's Student Book Box Table* has "double arm" top, comes in two sizes and in various heights for kindergarten through high school. **10.** *American Seating's* new movable high school student desk *(model 445)* has birch-finish plywood seat, back rails and desk top, mounted on a steel base. Seat has nylon-bearing swivel, back has self-adjusting lower rail. **11.** *Brunswick's All-Purpose chair* has a "semi-lounge" back, is available with detachable arm rests, tablet arm or chair desk top to extend its usefulness.

SCHOOLROOM FURNITURE AND EQUIPMENT



3. United States Plywood Corp.

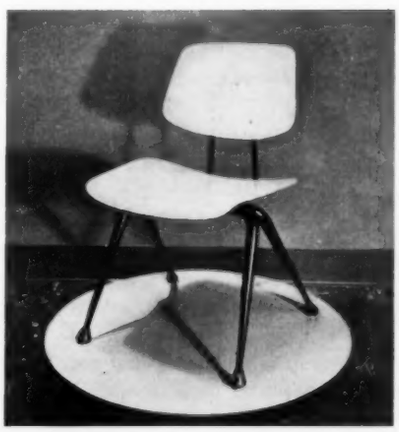
1. *EMCO wardrobe, Model 100,* has multiple operating receding doors fitted with corkboards or blackboards, flanked by teachers' and supply closets. **2.** *Miracle* plastic chalkboards come in four colors, have aluminum frames with display rail, map brackets. Boards are reversible, backed with cork. **3.** *Armorply* chalkboards have green porcelain-faced steel surface bonded to plywood; magnetic visual aid devices hold charts to its surface. **4.** *Barcol WARDROBE-door* has two sections with counterbalanced, vertical rise operation; upper section is fitted with tackboards, etc.

4. Barber-Colman Co.

5. *Adjustable Cabinets'* clothing cubicles are geared to abilities and sizes of children, have sitting ledge for tying shoes, shoe storage below. **6.** *Lyon Metal's* band instrument storage cabinets have sliding doors, are fitted with adjustable shelves and cubicles to hold the various instruments. **7.** *Adjustable Cabinet* also announces a new portable craft bench with facilities for simple metal, woodwork, plastics and other handicrafts. The bench is mounted on double wheel casters with stops to anchor it in position.

7. Adjustable Cabinets, Inc.

10. American Seating Co.



11. The Brunswick-Balke-Collender Co.

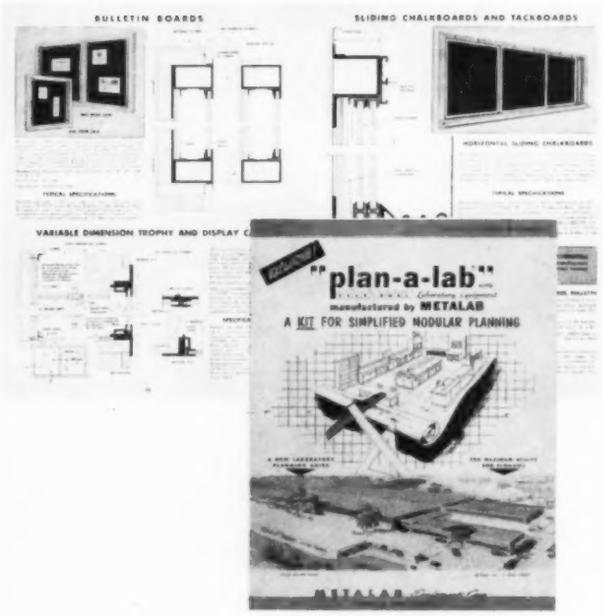
THE ENORMOUS INTEREST and activity in school construction is reflected by a widespread availability of school furniture and equipment with new designs, new materials, new ideas, as well as redevelopments of many standard items. In view of this activity among the manufacturers, the RECORD has assembled a roundup of currently available school products on these and the following pages. Due to necessary space limitations, a selection has been made of items that were felt to be typical in representing the wide range being produced.

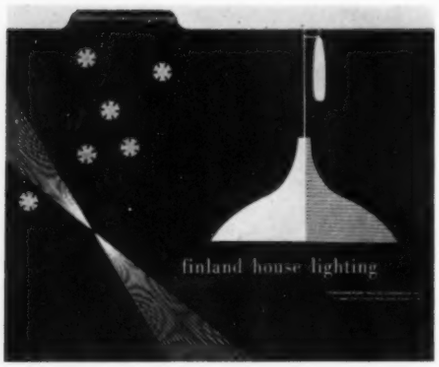
The most noticeable trends in the newer school furniture and equipment include emphasis on multi-use and adjustable furniture and clean-cut, colorful designs and finishes. These features have been achieved in most cases with no sacrifice of durability and ease of maintenance; many of the newer materials seem especially well suited to these goals.

In addition to the multi-use items, there are also a great number of new standard designs for specific teaching programs, especially in the science laboratory and industrial arts training fields.

(Continued on page 226)

For the addresses of Manufacturers whose products are mentioned, see page 262.





Two bulletins, right, illustrating school room equipment and below, a booklet on decorative lighting

SCHOOL ROOM EQUIPMENT

* *Loxit Chalkboard Setting System, Catalog B.B. 1954* describes the two complete Loxit Chalkboard Systems — the Loxit *Tru-Snap* all-aluminum snap-on trim set-up combined with a complete line of Loxit-Tylac Rite Green chalkboards in two colors and the new Loxit-Tylac *Komo-Thrift* Chalkboard, available in Rite Green and Darkrite Green. The booklet is complete with specifications, details, colors and accessories. 16 pp, illus. *Loxit Systems, Inc., 1217 W. Washington Blvd., Chicago 7, Ill.*

MODULAR PLANNING GUIDE

The new *Plan-A-Lab* folder issued by Metalab Equipment Corp. provides a transparent plastic guide and template corresponding to the ¼ in. to 1 ft scale, with regular cutouts representing various base units to assist chemical laboratory, school research department and hospital, architects and engineers in planning their modular layout.

Also included are a compactly designed floor plan showing all types of bases, explanatory chart stating the types of units that are above and below the table tops and lists and illustrations of service symbols and letters. In addition to Metalab's recommendations of color schemes, floor coverings and illumination, specially designed graph paper is inserted. 4 pp, illus. *Metalab Equipment Corp., 224 Duff Ave., Hicksville, L. I., N. Y.*

STEEL EQUIPMENT BOOKLET

Steel Equipment Booklet describes many products manufactured by the Precision Equipment Company, including: drills, drawers, storage and wardrobe cabinets, clothing lockers, tables, trucks, electric ovens, and shelving. 23 pp, illus. *Precision Equipment Company, 3666 N. Milwaukee Ave., Chicago 41, Ill.*

* DECORATIVE LIGHTING FIXTURES

Finland House Lighting, an attractive booklet, illustrates the many styles of decorative lighting designed by Paavo Tynell for the Finland House. A supplementary four page pamphlet demonstrates how these lighting fixtures have been used in cafeterias, churches, department stores, auditoriums and restaurants. 22 pp, illus. *Finnish-American Trading Corp., 41 East 50th St., New York 22, N. Y.*

* PARTITIONS

Metal Stud Non-Bearing Hollow Partitions, Technical Bulletin No. 7. Factory fabricated metal studs and how they are used in the construction of non-load-bearing hollow partitions is the subject of a recently released technical bulletin. Charts and tables showing the numerous fire and sound insulation tests and the size and spacing of the studs are included in the publication. Details and sample specifications are given and step-by-step photographs show the erection of the partition. 4 pp, illus. *Metal Lath Manufacturers Assoc., Engineers Bldg., Cleveland, Ohio.*

SPRAY PAINTING GUIDE

Making the Most of the Spray Painting Method is a booklet containing the main facts taken from a film of the same title. Included are actual photographs from the film, with descriptions of spray painting ranging from the right consistency of the material to be used to the actual spray finishing of the product. 32 pp, illus. *The DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio.*

(Continued on page 276)

* Other product information in Sweet's Architectural file, 1953

NORTH AMERICAN BUILDING STONES—1

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

The International Cut Stone Contractors' and Quarrymen's Association has recently compiled, for the first time in this country, a pictorial survey of all the various types of building stone available in the States. The survey was made to acquaint architects with stones available from the more than 160 quarries in the U. S., particularly those removed from their particular regions. National availability of each of the stones to areas far removed from the quarry site is being made more and more feasible by somewhat improved shipping facilities and increasing demand, particularly in residential construction.

In view of the scope of the survey, which outlines the wide choice of stones available for construction with information for their selection and use, pertinent parts of the data will be presented in Time-Saver Standards beginning in this issue. The editors wish to express appreciation to the Association and to Moore and Company, Inc., for their cooperation in making the material available.

Characteristics of Various Building Stones

Limestone

Oolitic — a calcite-cemented calcareous stone formed of shells and shell fragments, practically non-crystalline in character. It is found in massive deposits, located almost entirely in Lawrence, Monroe and Owen Counties, Indiana, and in Alabama, Kansas and Texas. This limestone is characteristically a free-stone, without cleavage planes, possessing a uniformity of composition, texture and structure. It possesses a high internal elasticity, adapting itself without damage to extreme temperature changes.

Dolomitic — a limestone rich in magnesium carbonate, frequently somewhat crystalline in character. It is found in ledge formations in a wide variety of color tones and textures. Generally speaking, its crushing and tensile strengths are greater than the oolitic limestones, and its appearance shows greater variety in texture.

Crystalline — a limestone which is predominantly composed of calcium carbonate crystals, though not of the re-crystallized nature characteristic of marble. It is high in crushing and tensile strength, very low in absorption, and usually shows only slight variations from a uniform light gray color and smooth texture.

Sandstone

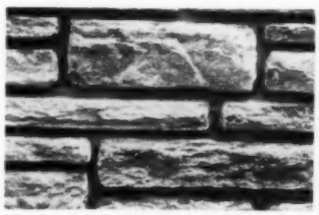
A sedimentary rock consisting usually of quartz cemented with silica, iron oxide or calcium carbonate. Sandstone is durable, has a very high crushing and tensile strength, and a wide range of colors and textures.

Quartzite

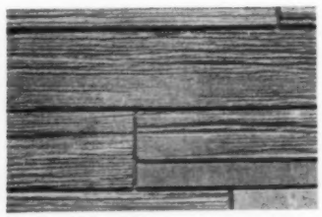
A compact granular rock composed of quartz crystals, usually so firmly cemented as to make the mass homogeneous and as hard as many granites. The stone is generally quarried in stratified layers, the surfaces of which are unusually smooth. Its crushing and tensile strengths are extremely high. The color range is wide.

Rubble (ledge stone), Flagging

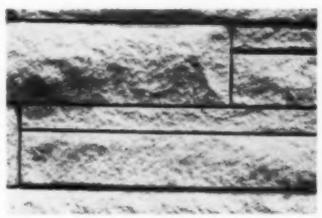
A natural cleft stone, which may be limestone, sandstone or quartzite, particularly adaptable as a veneer. Since a large number of stones can be classified as rubble, there is also a wide variety of colors and textures. This stone is broken to standard widths and in random lengths from 6 in. to whatever the various quarries supply.



Chesapeake-Hue (Maryland quartzite) split face, random ashlar

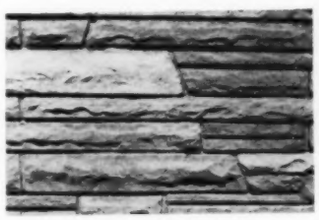


Indiana Limestone (oolitic) shot sawed finish



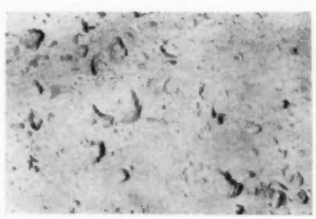
Indiana Limestone (oolitic) split face

Penn-Kress Stone (Pennsylvania quartzite) split face veneer



Colorado Red Sandstone (quartzite sandstone) split face

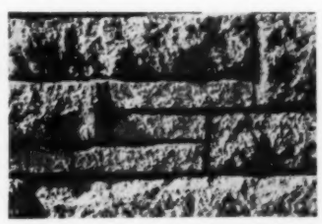
Sunset Stone (Wisconsin limestone) split face, random ashlar



Cordova Shell Limestone (Texas oolitic) smooth machine finish veneer

Tennquartz (Tennessee Stone quartzite) strip rubble veneer, random lengths

Carthage Stone (Missouri crystalline limestone) split face, random lengths, coursed

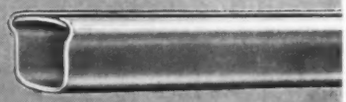


Winona Travertine Stone (Minnesota dolomitic limestone) split face, random ashlar

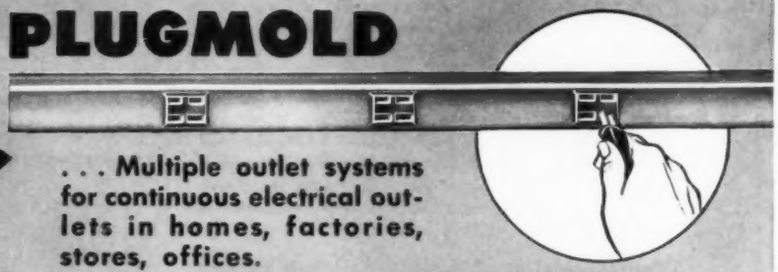
SPECIFY Wiremold's big 4 for better homes and buildings!

WIREMOLD One-Piece Surface Raceways

. . . safest, surest way to carry electrical power anywhere—right on the surface!



PLUGMOLD



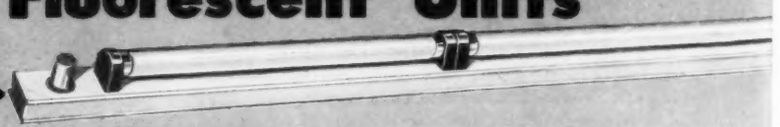
. . . Multiple outlet systems for continuous electrical outlets in homes, factories, stores, offices.

Four sizes with capacities up to 10 No. 6 conductors.

PANCAKE Overfloor Raceways

. . . safest, easiest way to carry power or communication lines overfloor to the point of use.

WIREMOLD Fluorescent Units



. . . for general lighting, cove or valance lighting; for all types of supplementary lighting, such as display cases, shelves, etc.

All over the country, progressive architects and builders are specifying ***Wiremold's BIG 4*** *— because the* ***BIG 4*** *offer the best way to wire most buildings and the only way to wire many buildings. Write today for full information — see how* ***Wiremold's BIG 4*** *put extra sales appeal into all your homes and buildings!*

The WIREMOLD Company
HARTFORD 10, CONNECTICUT

NORTH AMERICAN BUILDING STONES—2

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

Classifications of Building Stone

Cut Stone

This includes all stone cut or machined to a given size, dimension or shape, and produced in accordance with working or shop drawings which have been developed from the architect's structural drawings.

Ashlar Facing

Strictly speaking, any exposed stone facing made from broken or cut stone, set at random or in uniform courses, is an ashlar facing. In this sense, cut stone may be set as an ashlar facing, or the word ashlar may apply to various forms of facing with stone which is not measured and cut, according to shop drawing specifications, but is set at the discretion of the stone mason on the job. Ashlar facing may be of several surface finishes, viz:

Split Face. (*Sawed Bed*) This is customarily furnished in unit heights, generally speaking 4 in. on the beds, and is delivered to the job in strips or lengths from 18 in. to 4 ft. Usually split face is sawed on the beds and is split either by hand or with machine so that the surface face of the stone exhibits the natural quarry texture.

Strip Rubble. Strip rubble, generally speaking, comes from a ledge quarry. The beds of the stone, while uniformly straight, are of the natural cleft as the stone is removed from the ledge, and then split by machine to approximately 4 in. widths.

Sawed Face. This is a plain stone, the surface of which is the natural sawed finish. Like split face, it is furnished in unit heights, 4 in. on the bed and in lengths of 2 ft to 5 ft.

Rock (*Pitch*) *Face.* This is similar to split face, except that the face of the stone is pitched to a given line and plane, producing a bold appearance rather than the comparatively flush face obtained in split face. It occasions additional labor and necessarily an increased cost over split face.

Flagstone

Sawed — So furnished it is sawed from dimension blocks of limestone or sandstone, usually in 2 in. thicknesses. Monotones of buff or gray or variegated are obtainable in this type.

Ledgestone — The majority of flagstones come from ledge quarries and are furnished in thicknesses from $\frac{1}{2}$ in. to 2 in. Such flagging comes in various colors: tan, brown, gray, red, blue, white, green, pink, buff, purple, yellow, orange and combinations of these. Most quarries furnish it either in random, irregular sizes, or broken to definite or pre-determined dimensions.

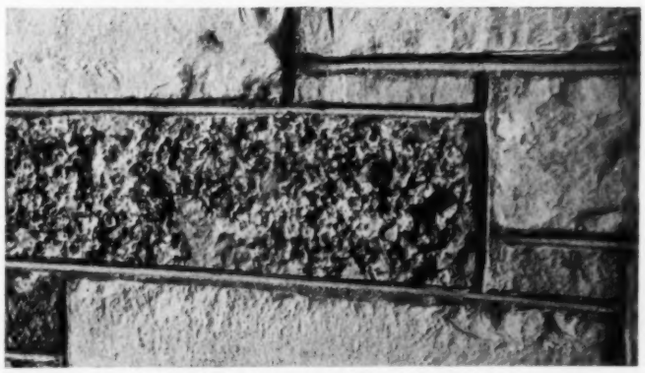
Color and Pattern in Building Stone

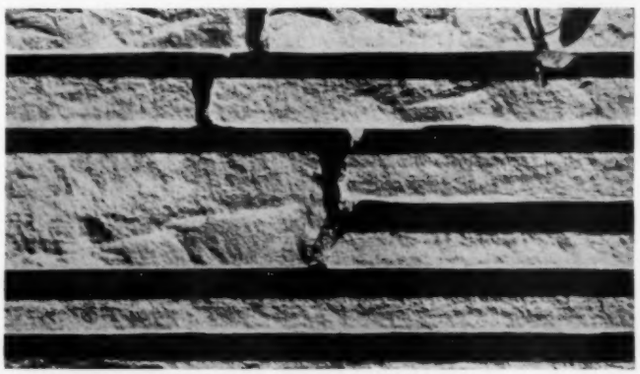
Color

Building stone is available today in very wide variety of colors. It is true, of course, that some of the startling "decorator" hues which have become common for interior decoration will not be found in natural stone. The basic colors themselves are there, but always reduced in intensity. There are reds and greens, blues, yellows, grays, and various mixtures, either as solid colors, or as variegated combinations.

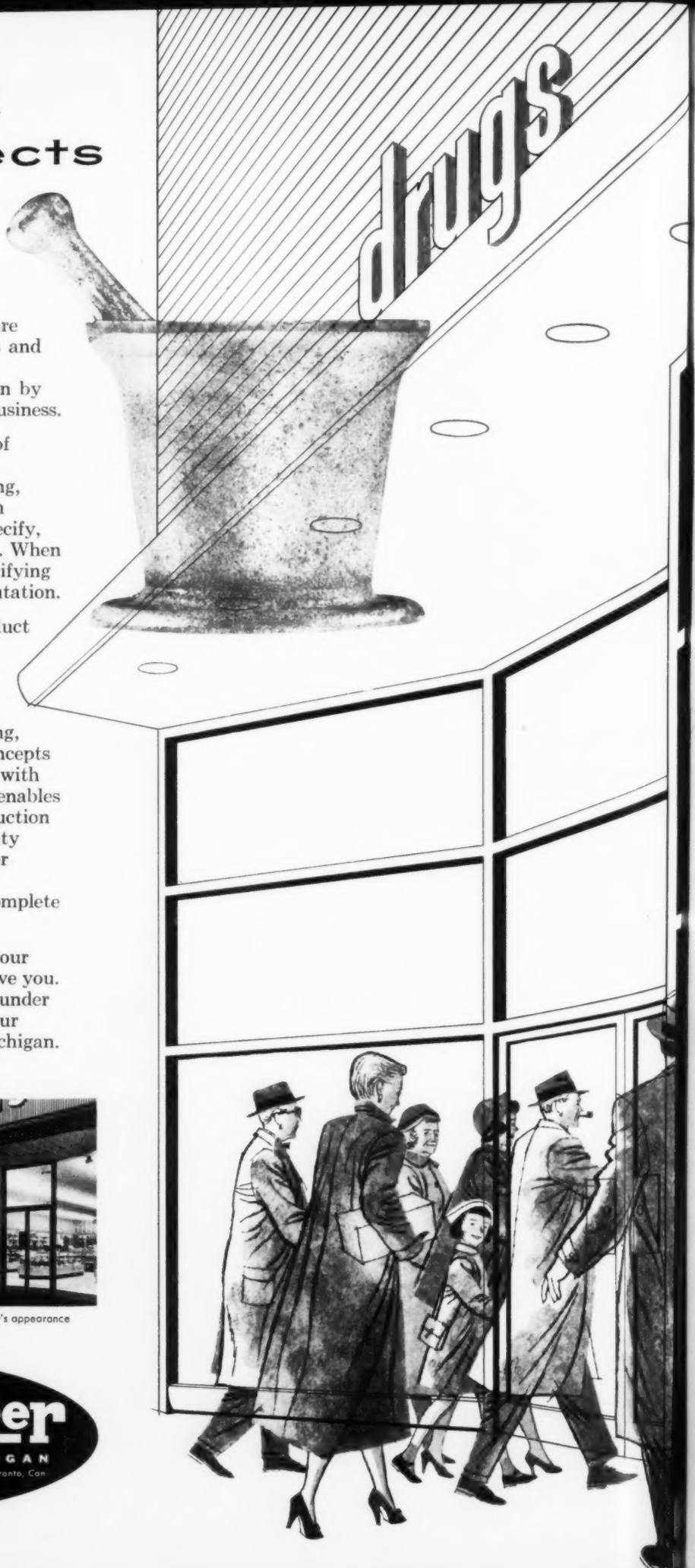
Some stones, like the limestones, gain effectiveness through the quality of the material, even though the color be monotone. Others, such as the strip rubble stones, frequently offer a wide range of hues which are normal to the stone as it comes from the quarry.

PATTERN can be established by variations in size, setting methods, color, finish





KAWNEER
helps architects to an Rx for profit



Competition and the trend to self-service are requiring more and more drug store owners and operators to remodel. You, as an architect, can benefit from this trend to modernization by designing modern fronts for their places of business.

Kawneer, leading designer and producer of architectural metals, doors and entrances, permanently colored Zourite aluminum facing, and sun-control products provides you with modernization materials that are easy to specify, easy to include in design, and easy to install. When you specify Kawneer you know you are specifying the best for the job, your client and your reputation.

Kawneer is constantly expanding its product line to make your work more effective. Example? The glazed porcelain-fired colors of Zourite facing now number seven. And special colors are available when quantity indicates. Colors are pleasantly eye-catching, modern, and in keeping with present-day concepts of design. Another example? Now, Kawneer, with the industry's most complete entrance line, enables you to specify either welded or bolted construction in doors. Kawneer versatility and availability help you design your best, since all Kawneer products are architect-designed for use by architects, while enabling you to specify a complete job from a single source.

There is a Kawneer Installing Dealer in your vicinity. He is specially factory-trained to serve you. Call him for capable assistance. He is listed under "Store Fronts" in the classified pages of your phone directory. Or write Kawneer, Niles, Michigan.

Kawneer drug store modernization

Kawneer helped this pharmacy's appearance

NORTH AMERICAN BUILDING STONES—3

Presented through the cooperation of the International Cut Stone Contractors' and Quarrymen's Association

Surface Finishes of Cut Stone

Surface finishing of cut stone is frequently an important factor in its final quality as set in a job. Variations in texture which result from different finishes, increase greatly the working palette of the architect, since the original wide range of stones is made broader still by a consideration of the choice of finishes.

Not all stones, of course, take every finish. And where a finish is applicable, it should be analyzed for cost, particularly if hand labor is required.

More detailed information than can be provided here may be obtained from any of the Stone Association members which will be listed in the March issue.

Smooth Planer Finish

This is the finish left on the stone as it comes from the planer, with such tool marks as may exist being carefully removed from the finished surface of the stone. It is the finish most generally specified.

Carbo-Finish

This is a very smooth finish produced by the use of a carborundum machine instead of a planer.

Rubbed Finish

This requires the rubbing of the stone with an abrasive, after the stone has been planed. Today, with carboloy tipped planer tools, this operation is generally unnecessary, since the planer tool takes the stone down to a finish comparable to a rubbed finish. Rubbing stone adds to the cost.

Sawed Finish, Sand-Sawed

This is the finish which is left as the stone comes from the gang-saw. As such, it provides a moderately smooth, granular surface, varying in texture with the type of stone.

Sawed Finish, Chat-Sawed

Finish is produced by sawing with coarse chat under the sawing blade, resulting in an interesting, rough surface texture.

Sawed Finish, Shot-Sawed

Finish is similar to chat-sawed, except that chilled steel shot is used under the blades. The finished surface is heavily ribbed with irregular, roughly parallel grooves.

Tooled Finishes

Since tooled finishes are usually costly, they seldom are used in modern construction. It is recommended that an Association member be consulted before specifying these finishes.

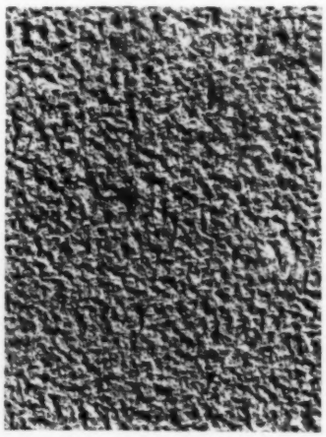
Hand Finishes

There is also a wide variety of hand finishes applicable to cut stone. These are usually expensive and should be considered only when cost is not an important factor. Information about such finishes as bush hammer, crandal, pick point, stripping, etc., is available from any of the Association members.

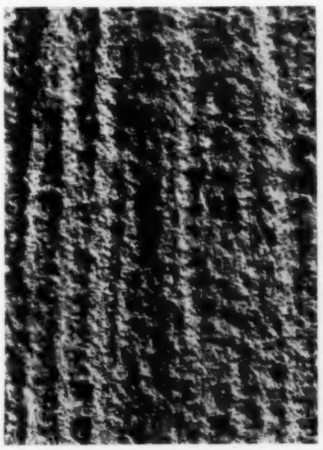
Planer Finish

Rubbed Finish

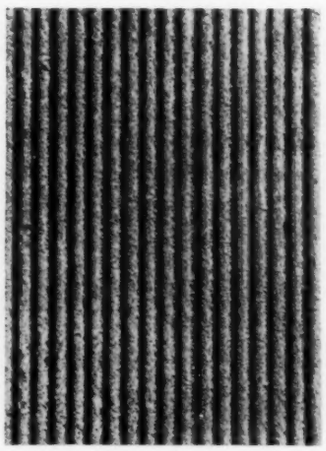
Sand Sawed Finish



Chat Sawed Finish



Shot Finish



Tooled Finish

for top quality ceilings

PLASTER... reinforced

Large residential ceilings require quality construction for lasting beauty.

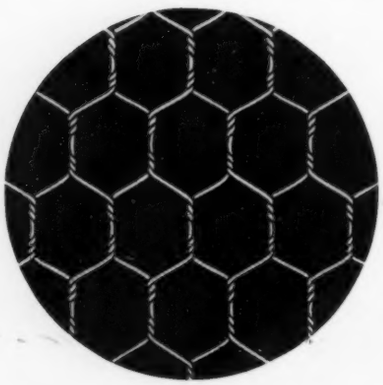
You get top quality by using plaster reinforced with Keymesh galvanized reinforcement...applied to gypsum or insulating lath.

This network of multi-directional galvanized reinforcing wire adds greatly to the strength of ceilings. It also helps assure a uniformly full thickness of plaster over the entire ceiling. It guards against cracking. And, where radiant heating is installed in ceilings, Keymesh helps give more uniform heat distribution, as well as accelerating it.

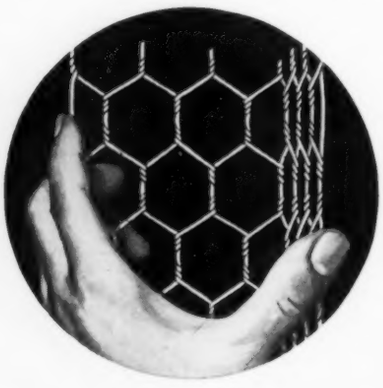
Some architects and builders want this same strength and quality on walls as well as ceilings. Others find that Keycorner applied to inside corners, wall-ceiling junctures and points of weakness, and Keybead at outside corners, give them the quality they require.

That's why the Keystone system of plaster reinforcement is called—3 Keys to Stronger Plaster.

3 KEYS TO STRONGER PLASTER



Keymesh has been proved through the years as a superior reinforcement for stucco. Now plasterers are recommending it for ceilings to increase strength and protect against cracking.



Keycorner is preformed to fit accurately and snugly in corners and at wall and ceiling junctures. It also is ideal where strip lath is required . . . doesn't rust . . . eliminates waste.

Keybead combines open-mesh reinforcement with a precision-formed bead. It assures a solid plaster corner, reinforced with a network of galvanized wire, preventing rust streaks.

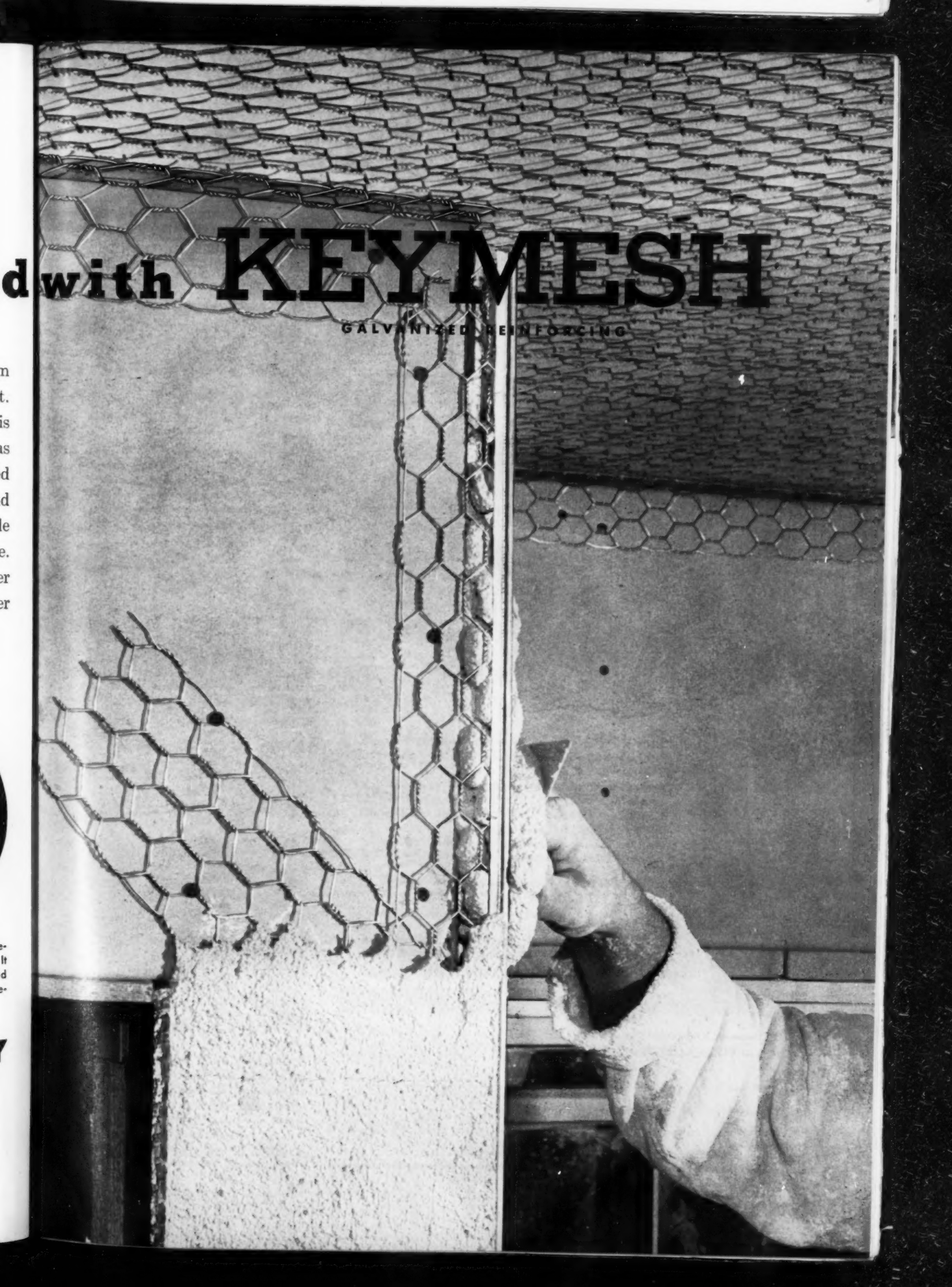
KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

KEYMESH • KEYCORNER • KEYBEAD • KEYSTONE NAILS • KEYSTONE TIE WIRE
KEYSTONE NON-CLIMBABLE FENCE • KEYSTONE ORNAMENTAL FENCE

see our CATALOG in SWEET'S FILE

2d 11a 3d


dwith KEYMESH
GALVANIZED REINFORCING

FOR LIBRARY PROJECTS

Twice the Capacity

Hamilton Compo Stack installation, Michigan State Library, Lansing, Michigan.

Providing for more books in less space might well be the key to your next successful library project. The Hamilton Compo Stack solves that problem with remarkable sliding shelves which *double library capacity*. Hamilton's popular Continuous Upright Stacks and Hamilton-Standard Stacks are also available in handsome, durable steel with easily adjustable shelves and a full range of efficiency features.

Compo Stack with lock-equipped compartment.

For details on Hamilton stacks use the coupon below. No obligation, of course.

Library Equipment Division

Hamilton

MANUFACTURING COMPANY, TWO RIVERS, WISCONSIN

Hamilton Manufacturing Company, Two Rivers, Wisconsin

☐ Please send my copy of "Bookstacks by Hamilton," AR-2

☐ Send drawings, AR-3, and Specifications, AR-4

NAME_____ POSITION_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

AE PRODUCTS

(Continued from page 215)

SCHOOLROOM FURNITURE USES NEW TECHNIQUES, MATERIALS

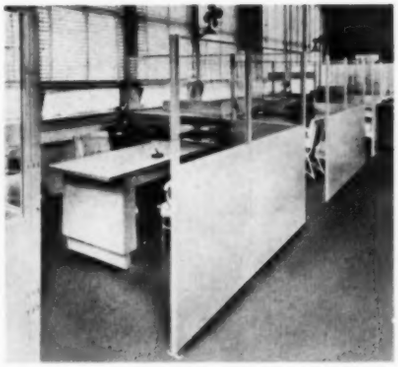
▲ **12. The Tollerton Company** features a new installation of *Tolco TA-2 Art Tables;* the size and design of the units are planned to permit a wide variety of room arrangements. The Tolco line of industrial arts equipment is made of hard rock maple, electronically glued, with bolted mortised and tenoned joints.

▲ **13. General Electric's** *Textolite* plastics surfacing has been used in a number of new schools for desk, table and counter tops. The durable qualities of the plastic, coupled with its resistance to scratches and stains are said to reduce costs of upkeep. In the installation shown, the plastic is used on *Norcor* desks.

▲ **14. Lustrik, Inc.,** suggests its aluminum sheets for such uses as facing for the compact and efficient custom-made desk illustrated above. Although this particular unit was designed for a business office, its counterpart might well be at home in a school. The aluminum sheets are available in five patterns and can be cut and formed on the job, painted.

AEI PRODUCTS

MANY NEW OFFICE EQUIPMENT ITEMS ARE ADAPTABLE TO SCHOOLROOMS



▲ **15. The Globe-Wernicke Co.** has recently introduced a line of free-standing partitions as part of its *Techniplan* line of modular office equipment. The units might also be useful in classrooms or school offices to segregate and organize work areas. The partitions are supported by special adjustable floor connectors made of heavy metal angles that fit inside the partition posts. Clamps hold adjoining panels. The partitions come in 48- and 66-in. heights.

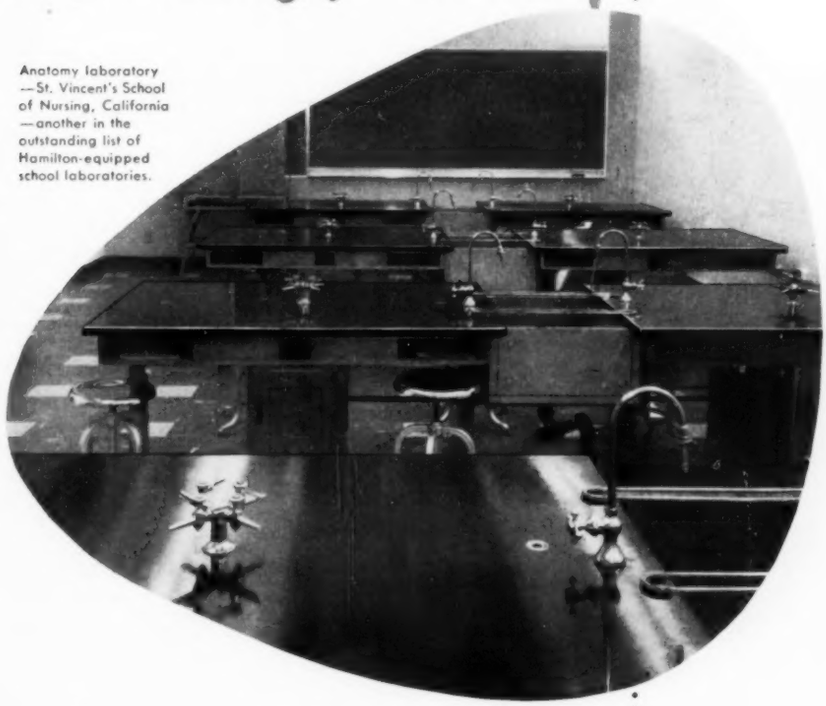
▲ **16. Lehigh Furniture Corp.** has added a new group of chairs to its line of office, reception room and lounge furniture. The new group has a suspended or "floating" design to give an appearance of lightness without sacrificing strength. Included in the line are executive, secretarial and receptionist swivel chairs, arm chairs, side chairs and lounge chairs. All are available in solid walnut or birch and feature spring-and-rubber upholstery construction.

(Continued on page 230)

For the addresses of manufacturers whose products are mentioned, see page 262.

FOR LABORATORY PROJECTS

Maximum Flexibility



Anatomy laboratory —St. Vincent's School of Nursing, California —another in the outstanding list of Hamilton-equipped school laboratories.

Best laid plans for school, hospital and college laboratories come off beautifully when you count Hamilton in from the start. There's a remarkable selection of Hamilton standard equipment and specialized units for every planning and installation problem. Give invaluable flexibility to your laboratory plans by contacting your Hamilton Field Engineer for *free* help—backed by work-gained experience.

Send in the coupon below for that know-how help from Hamilton! No obligation, of course.

Laboratory Equipment Division

Hamilton

MANUFACTURING COMPANY, TWO RIVERS, WISCONSIN

Hamilton Manufacturing Company, Two Rivers, Wisconsin

☐ Please send me literature describing Hamilton laboratory equipment. I am most interested in equipment for ☐ schools and colleges; ☐ hospitals; ☐ industrial laboratories. ☐ Please have your Field Engineer contact me.

NAME_____ POSITION_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

Kenneth H. Ripnen, architect, selects Bigelow's Cushionlok

The firm of Kenneth H. Ripnen Company, Inc., is nationally known for pioneering and specializing in office layout and office building architecture.

Under the guidance of Mr. Ripnen, this organization has served such firms as the Sinclair Oil Corporation, Commercial Solvents Corporation, the Lone Star Cement Corporation, Manufacturers Trust Company and Republic Steel Corporation.

Concerning the selection of *Cushionlok** carpet for a recent project, the Hathaway Manufacturing Company at 100 Park Avenue, New York City, Mr. Ripnen has these comments:

"**In planning** the Hathaway offices, we were confronted with the problem of choosing a carpet that would give maximum quietness as well as being attractive and long-wearing.

"**We chose** Bigelow *Cushionlok* carpet because we found it effectively deadens the noise of typewriters, voices, buzzers and office traffic. We also find *Cushionlok* an economical and handsome carpet which stands up under rigorous wear.

"**We can report** complete satisfaction with the installation and performance of Bigelow's *Cushionlok* carpet."

Are you planning an installation? Then consult Bigelow's experts as early in your planning as possible.

These trained specialists are ready to help find the best color, pattern and weave for your purpose —at a price suitable for you.

Get in touch with Bigelow today by calling the sales office nearest you.

For a sample of Cushionlok, write on your business stationery to Dept. A1, 140 Madison Ave., New York 16, N. Y.

carpet for Hathaway Co.!

BIGELOW Rugs and Carpets

Beauty you can see . . . quality you can trust . . . since 1825

Bigelow sales offices are located in the following strategic cities: Atlanta, Ga.; Baltimore, Md.; Boston, Mass.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Columbus, Ohio; Dallas, Tex.; Denver, Col.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Indianapolis, Ind.; Kansas City, Mo.; Los Angeles, Calif.; Milwaukee, Wisc.; Minneapolis, Minn.; New York, N.Y.; Philadelphia, Penna.; Pittsburgh, Penna.; St. Louis, Mo.; Salt Lake City, Utah; San Francisco, Calif.; Seattle, Wash.

*REG. U. S. PAT. OFF.

Specify Salvajor

The One Machine

that Scraps
Pre-Washes
Reduces Food Waste

When you're planning a dish-washing layout, remember that Salvajor scraps and pre-washes 2½ times faster. Food waste is reduced in volume by 50%. Users tell us they get savings in time, labor and often are able to free valuable kitchen space.

Salvajector Scraps, Pre-Washes and Disposes

All the scrapping and pre-washing efficiency of Salvajor plus the action of a powerful ¾ h.p. disposer that eliminates garbage handling completely.

New Specification Sheets Now Available

Write today, using the coupon below, for your copies of new specification sheets on the entire line of Salvajor kitchen sanitation equipment.

The Salvajor Company
118 Southwest Blvd., Dept. AC
Kansas City, Mo.

Please send complete information on the Salvajor line of kitchen sanitation equipment.

Name_____

Address_____

City_____ **State**_____

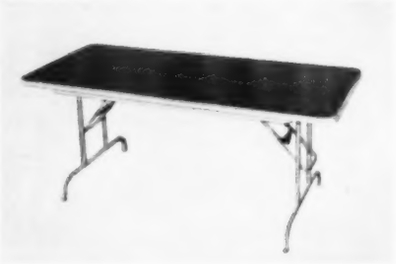
No. 4

Salvajor

AEH PRODUCTS

(Continued from page 227)

FOLDING TABLES, CHAIRS ADD FLEXIBILITY TO SCHOOLROOMS



▲ 17. Shwayder Brothers Inc., announces two new folding units for multi-purpose rooms, the *Samsonite* tablet-arm chair, and *Samsonite* banquet table. The chair has a baked enamel finish, plywood tablet-arm. The table is light weight, sturdy, has safety lock on legs; it is 30 in. wide, comes in 6 and 8 ft lengths.

▲ 18. Seating, Inc., manufactures a new rolling folding table which seats up to 14 persons. Called the *Sico L-8 Table*, the unit folds at the center and rolls on 4-in. rubber casters. The top is 2 ft-3 in. high and surfaced with hard laminated plastic over mahogany veneer.

(Continued on page 234)

For the addresses of manufacturers whose products are mentioned, see page 262.

SIMPSON CERTIFIED ACOUSTICAL CONTRACTORS
USING GENUINE Simpson ACOUSTICAL PRODUCTS

ALABAMA
Badham Insulation Co., Inc., Birmingham
Stokes Interiors, Inc., Mobile

ARIZONA
Fiberglas Engineering & Supply Co., Phoenix
Hall Insulation & Tile Co., Tucson

CALIFORNIA
Coast Insulating Products, Los Angeles and San Diego
Cramer Acoustics, San Francisco and Fresno

COLORADO
Construction Specialties Co., Denver

GEORGIA
Dumas and Searl, Inc., Atlanta

ILLINOIS
General Acoustics Co., Chicago

INDIANA
The Baldus Co., Inc., Fort Wayne
E. F. Marburger & Son, Inc., Indianapolis

IOWA
Kelley Asbestos Products Co., Sioux City

KANSAS
Kelley Asbestos Products Co., Wichita

KENTUCKY
Atlas Plaster & Supply Co., Louisville

LOUISIANA
Ideal Building Materials, Inc., Shreveport

MARYLAND
Lloyd E. Mitchell, Inc., Baltimore

MICHIGAN
Detroit Fiberglas Insulation Company, Detroit

MINNESOTA
Dale Tile Company, Minneapolis

MISSISSIPPI
Stokes Interiors, Inc., Jackson

MISSOURI
Kelley Asbestos Products Co., Kansas City
Hamilton Company, Inc., St. Louis

NEBRASKA
Kelley Asbestos Products Co., Omaha

NEW JERSEY
Kane Acoustical Co., Fairview

NEW MEXICO
Fiberglas Engineering & Supply Co., Albuquerque

NEW YORK
Robert J. Harder, Inc., Lynbrook, L. I.
James A. Phillips, Inc., New York
Davis-Fetch & Co., Inc., Buffalo, Rochester and Jamestown
Davis Acoustical Corp., Albany

NORTH CAROLINA
Bost Building Equipment Co., Charlotte

OHIO
R. B. Brunemann and Sons, Inc., Cincinnati
The Mid-West Acoustical & Supply Co., Cleveland, Akron, Columbus, Dayton, Springfield and Toledo

OKLAHOMA
Harold C. Parker & Co., Inc., Oklahoma City
Kelley Asbestos Products Co., Tulsa

OREGON
Acoustics Northwest, Inc., Portland
R. L. Elfstrom Co., Salem

PENNSYLVANIA
General Interiors Corporation, Pittsburgh
Jones Sound Conditioning, Inc., Ardmore

TEXAS
Blue Diamond Company, Dallas
Fiberglas Engineering & Supply Co., El Paso
Otis Massey Co., Ltd., Houston
Builder's Service Co., Fort Worth

UTAH
Utah Pioneer Corporation, Salt Lake City

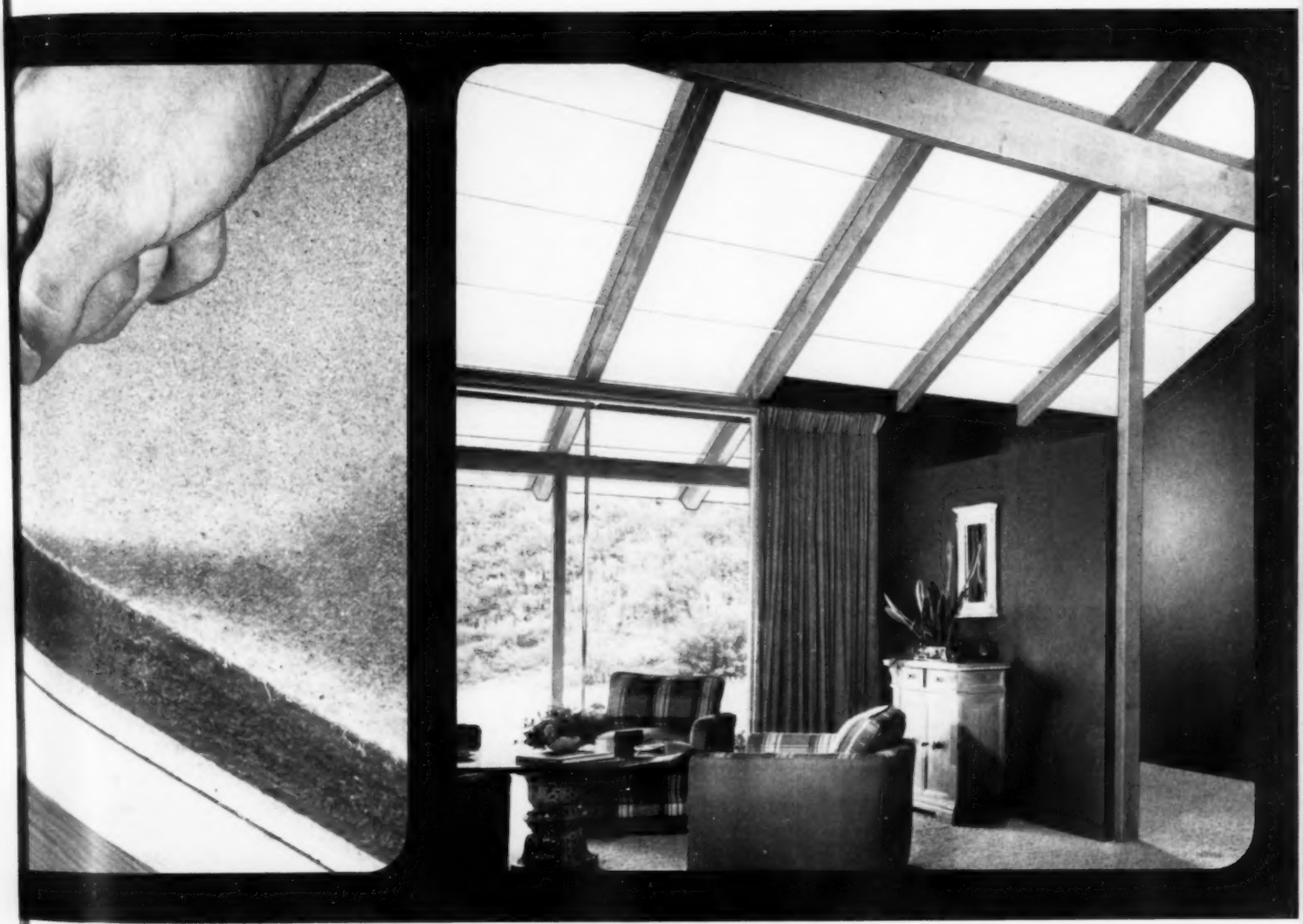
VIRGINIA
Manson-Smith Co., Inc., Richmond

WASHINGTON
Elliott Bay Lumber Co., Seattle

WISCONSIN
Building Service, Inc., Milwaukee

CANADA
Albion Lumber & Millwork Co., Ltd., Vancouver, B. C.
Hancock Lumber Limited, Edmonton, Alberta

ceilings anywhere in U.S. and save $80 to $300 a home



p 2" wood deck plus 1" fiberboard insula-
ion. Helps absorb sound, too. Makes homes
uieter, more livable. Exclusive continuous
apor barrier protects against condensation
n any climate.

3. AND FINISHED CEILING! The underside of Insulite Roof Deck is finished with a white flame-resistant surface at the factory. Simply lay Roof Deck over pre-finished beams and the ceiling is done! No need to plaster, paint, stain or wax. Reduces labor and material costs. Insulite Roof Deck is available in 2′ x 8′ units, 1½", 2" and 3" thick with or without Insulite's exclusive vapor barrier.

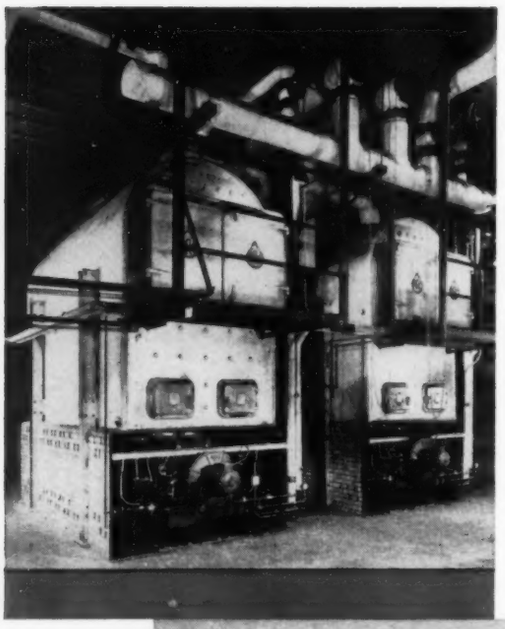
Makes it easy to apply low-cost built-up roof.
Standard mopping and laying of roofing felts plus imbedding of gravel in bitumen provides attractive, weatherproof roof at low cost. For wood, slate or asbestos shingles, install nailing strips over the deck. Insulite Roof Deck easily supports weight of workmen and equipment.

Complete Information Now Available. Actual on-the-job pictures and construction details show how to use this new Insulite Roof Deck to build better for less. Cost comparison forms show how much you can save. Write Insulite, Minneapolis 2, Minnesota.

Now! Apply roof deck, insulation and finished ceiling in one quick money-saving operation anywhere

INSULITE
Roof Deck

INSULITE DIVISION
Minnesota and Ontario Paper Company
Minneapolis 2, Minnesota



Two NATIONAL Commercial Steel Boilers serve the heating requirements of the entire Waukegan, Illinois plant and office of the Vascoloy-Ramet Corporation. The heating load approximates 70,000 sq. ft. of radiation, equivalent to 16,800,000 Btu per hour. Permanent scaffolding expedites cleaning and servicing.

View showing the recent one-story addition to Vascoloy-Ramet Corporation buildings in Waukegan, Illinois. This new addition houses the central heating plant. A. Epstein & Sons, Chicago, Architects & Engineers; Ralph Swanson Construction Co., General Contractors; William A. Pope Company, Chicago, Heating Contractor; Oil Burner installation by Mid-West Heat Service, Chicago.

PERFORMANCE *CONFIRMS* RIGHT DECISION

NATIONAL STEEL BOILERS

chosen by VASCOLOY-RAMET CORPORATION for modernized central heating system of newly enlarged plant. When Vascoloy-Ramet Corporation, Waukegan, Illinois, recently built a spacious one-story plant addition, the coal-fired National Steel Boiler that had served the existing plant for many years was threatened with too heavy a strain for the extra load required. It was decided to provide a new central boiler room in the plant addition.

Since excellent results had been achieved with the first National Boiler, two new automatic, oil-fired National Commercial Steel Boilers were installed for heating the entire plant—and for supplying domestic hot water for cafeterias, lunchrooms, lavatories and showers. Low pressure steam from the tandem installation is distributed to radiators, convectors and unit heaters throughout the plant and offices.

Going into their second full season of operation, these new National Boilers are living up to expectations and fuel costs are within original estimates. Vascoloy-Ramet Corporation is now sure it made the right decision!

To help you decide right on heating, write for Catalog AR-507 giving complete information on National Commercial Steel Boilers.

THE NATIONAL RADIATOR COMPANY • JOHNSTOWN, PA.

Complete heating for homes, commercial buildings and industry since 1894

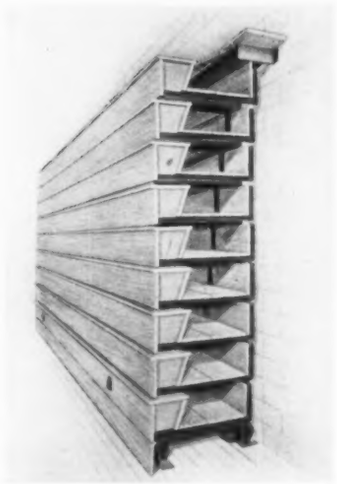
for Real Heating Comfort go NATIONAL

BRANCH OFFICES:
BALTIMORE • BOSTON • BUFFALO
CHICAGO • CLEVELAND • DETROIT
NEW YORK • PHILADELPHIA
PITTSBURGH • RICHMOND • SAN FRANCISCO • WASHINGTON, D.C.

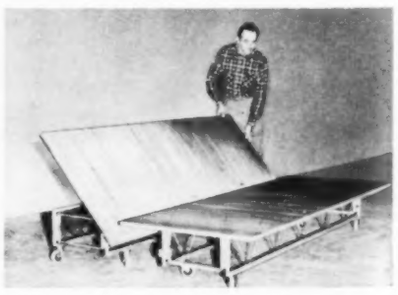
A|E PRODUCTS

(*Continued from page 230*)

FOLDING BLEACHERS, STAGES ADD SPACE TO SCHOOLROOMS



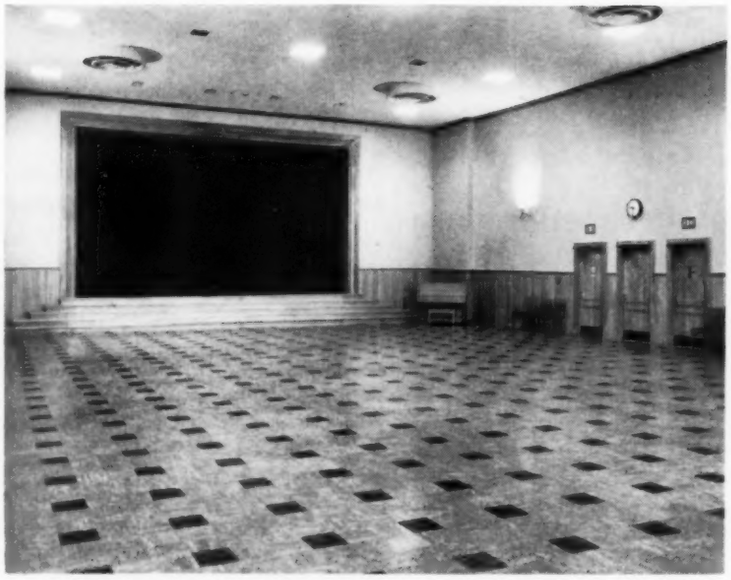
▲ **19. Hussey Mfg. Co., Inc.,** has developed a new model "*Roll-Out*" gym seat stand. When closed, the unit presents a smooth, vertical face, takes a small amount of space. When open, it forms a standard bleacher stand, with the added feature of completely enclosed decks to prevent the collection of waste under the stand and to reduce the fire hazard. Each section is said to be easily opened or closed by one person. Braces and tie-rods are designed to resist any sway.



▲ **20. Rol-Fol Table, Inc.,** now offers portable folding stage units that can be used as individual speakers stands, etc., or connected together to form a large platform. The units come in sections 3 ft wide by 6, 8, 10, 12, or 14 ft long. Standard heights are 16 and 24 in. The stage folds by lifting the top pieces to a vertical position; supporting steel trusses are then collapsed inwardly. Rubber tipped floor stops are set against the floor for a fixed stage position.

(*Continued on page 238*)

For the addresses of manufacturers whose products are mentioned, see page 262.



KenRubber colors are lighter, brighter...ideal for use in today's auditoriums, school rooms and offices. The wide modern selection available ranges from deep, clear dark colors to crisp, clean light tones . . . makes any flooring design desired simple to plan . . . quick and economical to execute.

Another money-saving advantage of KenRubber is installation economy. Uniform marbleization plus precision edges and corners means quicker alignment . . . reduced labor time and expense.

Architect CHARLES BACON ROWLEY says:

"KenRubber was used because students' needs came first"

Charles Bacon Rowley has been responsible for many of the most noteworthy educational installations in the Cleveland area...where he has been practicing since 1921. To his credit are the designs for outstanding schools of every kind . . . including college buildings as well as secondary units. Because of this wide experience, Mr. Rowley knows intimately what school-aged children—and their teachers—need . . . has chosen KenRubber many times for its colorful beauty, resilient strength and durable economy.

Specifications and Technical Data

INSTALLATION: Over any smooth, firm interior surface removed from grease and oils. With new KenSet® Adhesive, KenRubber can now be installed easily and economically over concrete in contact with the earth.

THICKNESSES: KenRubber is available in .080" and 1/8" gauges for normal flooring demands . . . 3/16" gauge for extra-heavy duty applications

SIZES: Standard tile size is 9" x 9" . . . with a wide range of special sizes available on order.

APPROXIMATE INSTALLED PRICES
(per sq. ft.)

	Standard (.080") Gauge	1/8" Gauge	3/16" Gauge
KENRUBBER	50¢	65¢	80¢

These costs are based on a minimum area of 1,000 sq. ft. over concrete underfloor. Cost of KenRubber's exclusive die-cut decorative ThemeTile is available from the Kentile Flooring Contractor. He's listed under FLOORS in the Classified Telephone Directory.

If you haven't worked with a Kentile, Inc. Flooring Representative, you can't know how valuable his technical training and years of practical experience can be to you. Call on him for every flooring problem . . . whether remodeling a small area or constructing a major project. For his name write the nearest of the Kentile, Inc. offices listed below.

KENRUBBER®
TILE FLOORS

KENTILE, INC., 58 SECOND AVENUE, BROOKLYN 15, NEW YORK • 350 FIFTH AVENUE, NEW YORK 1, NEW YORK • 705 ARCHITECTS BUILDING, 17TH AND SANSOM STREETS, PHILADELPHIA 3, PENNSYLVANIA • 1211 NBC BUILDING, CLEVELAND 14, OHIO • 900 PEACHTREE STREET N.E., ATLANTA 5, GEORGIA 2020 WALNUT STREET, KANSAS CITY 8, MISSOURI • 4532 SO. KOLIN AVENUE, CHICAGO 32, ILLINOIS • 4501 SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA

ELKAY announces the new *Sit-Down Sink*

PHOTOGRAPH BY EZRA STOLLER

HOUSE BEAUTIFUL is devoting its cover and 19 pages to this Sit-Down Sink kitchen—the sensation of its fabulous 1954 Pace-Setter House, designed by Alfred Parker, A.I.A.

Drawing shows ease with which woman does sink work while sitting down. The shallow bowl allows knees to slide under—provides handy depth for vegetable preparation and many other tasks.

The first really new kitchen sink development since stainless steel

Once in a great while something new . . . *really new* . . . is introduced in the home equipment field. Like the hot water heater or the automatic dishwasher, it completely revolutionizes the routine of American housewives . . . opens profitable new markets.

Now ELKAY introduces a dramatically new design for kitchen sinks . . . a scientific way to end sink fatigue . . . a sure-fire way to make the "preferred list" of countless women. This amazing SIT-DOWN SINK, made of luxurious *Lustertone Stainless Steel*, will be featured on the cover of *House Beautiful* magazine and advertised to millions of homemakers this spring.

Write for further information and ways to feature locally the all new "sink of the century".

DON'T FORGET LUSTERTONE—Standard or Custom

Choice of 36 stock models measuring 39" to 144" including single and double bowl styles—plus three bowl and two bowl SIT-DOWN SINKS. Also custom-built sinks and counter tops to fit any plan—residential or institutional.

The Only Sink Guaranteed to Outlast the Home!

ELKAY Lustertone

ELKAY MANUFACTURING COMPANY

1872 S. 54th Avenue • Chicago 54, Illinois

The World's Oldest and Largest Manufacturer of Stainless Steel Sinks

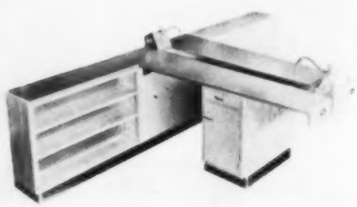
A/E PRODUCTS

(Continued from page 234)

NEW SCHOOL LAB FURNITURE EMPHASIZES FUNCTIONAL UNITS

▲ 21. Weber Showcase & Fixture Co., Inc., has manufactured and installed an interesting series of 4-student lab tables in Pope Pius X School. Table tops are cantilevered from center storage base; attached stool seats are hinged.

▲ 22. METALAB Equipment Corp. produces an extensive line of well equipped, durable lab furniture, such as the center table shown above. The table combines a variety of facilities, has sink, waste chutes, concealed pipe tunnels.



▲ 23. John E. Sjostrom Co. makes a series of interlocking basic units, called *Unaflex*, which can be combined to form a wide variety of lab wall or table units. A typical lab table composed of the units is shown above. All surfaces are chemical-resistant, made of hardwoods.

(Continued on page 242)

For the addresses of manufacturers whose products are mentioned, see page 262.

DETROIT'S SHERATON-CADILLAC HOTEL is an outstanding example of the effective use of Pittsburgh products in modernization programs involving large structures. A feature of this remodeling is the lobby which includes forest green Carrara Structural Glass, Pittco Store Front Metal construction and a translucent "glass wall" glazed with Mississippi Softone Bondlite. This results in an interior that is tremendously appealing and distinctive. Architect: Mary Morrison Kennedy, Boston, Mass.

HERCULITE DOORS and frames, with the Pittcomatic Hinge—"the nation's finest automatic door opener"—were installed at this entrance. Here a light touch on the handle opens doors smoothly and silently as if by magic. In the arcade beyond, Pittsburgh's Tubelite Doors and Pittco Metal were widely used.

Design it better with **Pittsburgh Glass**

Your Sweet's Catalog File contains detailed information on all Pittsburgh Plate Glass Company products . . . Sections 7a, 13e, 15b, 16b, 21.

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

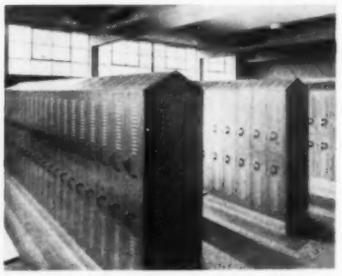
(*Continued from page 238*)

STEEL STORAGE UNITS PROVIDE ECONOMICAL PROTECTION

◀ **24. All-Steel Equipment Co.,** includes the combination supply and clothing storage cabinet shown at far left in their line of steel cabinets and lockers. The unit comes 36 in. wide, 78 in. high, and 18 or 24 in. deep.

◀ **25. Steel Service Manufacturing Co.** has recently developed a new line of *Steel-Pride* lockers and cabinets with a special U-type interlocking joint construction, which is said to both cut assembly time and give rigidity and protection.

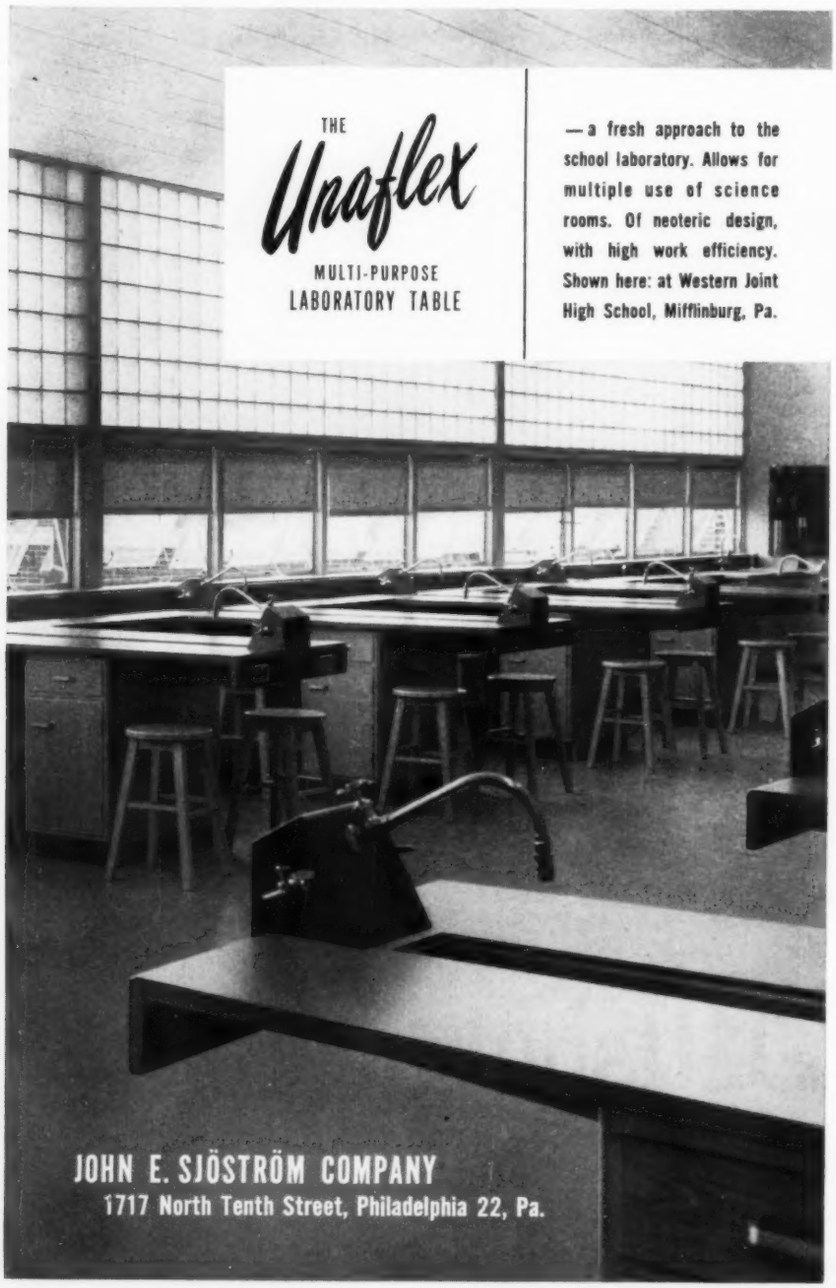
▲ **26. Fred Medart Products Inc.,** features the *Grade-Robe* line of lockers. The multiple locker unit can be installed free standing or recessed in a classroom or corridor wall. A master group lock control is provided as well as single locks.



▲ **27. Berger Manufacturing Div. of Republic Steel Corp.** makes double-tier gym lockers with louvered doors and perforated end panels for ventilation. Tops are sloped to reduce dust and discourage stacking articles.

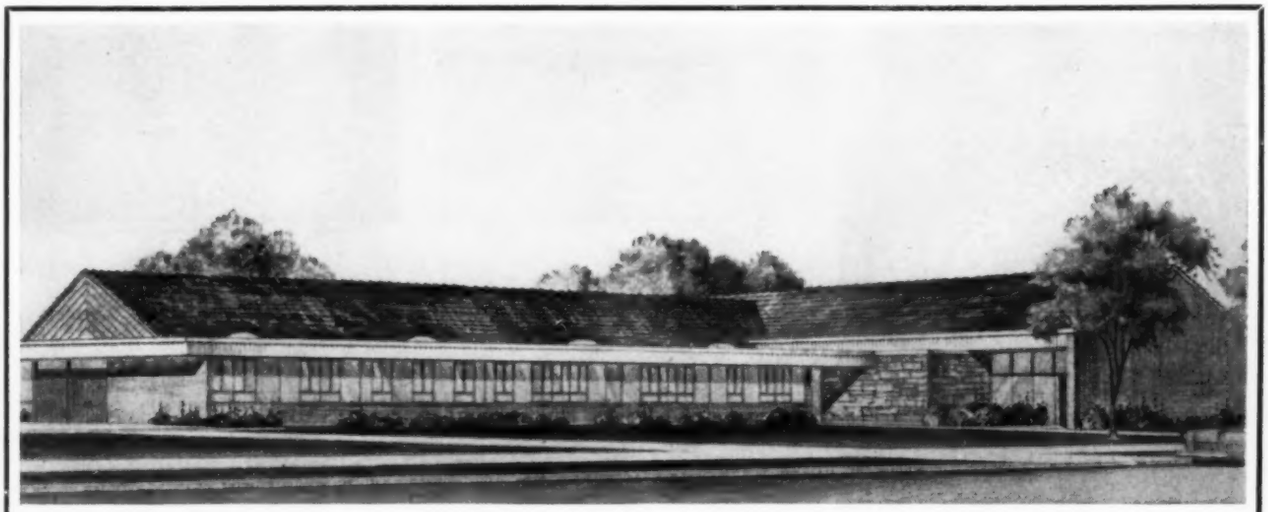
▲ **28. W. R. Ames Co.** has developed a sliding shelf book storage unit, *Stor-Mor Book Drawers,* to increase library storage capacity. The unit is said to accommodate up to twice as many volumes as conventional shelving. The same type uprights used for standard bracket-type or case-type shelves serve as supports for the drawers, which may be interchanged with regular shelving. The units are fabricated of steel, and operate on ball-bearing rollers.

(*Continued on page 244*)


THE
Unaflex
MULTI-PURPOSE
LABORATORY TABLE
—a fresh approach to the school laboratory. Allows for multiple use of science rooms. Of neoteric design, with high work efficiency. Shown here: at Western Joint High School, Mifflinburg, Pa.
JOHN E. SJÖSTRÖM COMPANY
1717 North Tenth Street, Philadelphia 22, Pa.

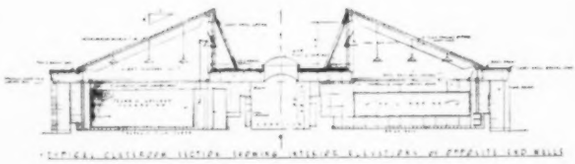
For the addresses of manufacturers whose products are mentioned, see page 262.

The economy of LUDOWICI tile *for* School Roofs



a case in point

Washington School Addition
Evanston, Illinois
Perkins & Will, Architects-Engineers
Chicago, Illinois



For only $1\frac{1}{2}\%$ more than the total cost of the building, this new school will receive absolute roof fire protection and a permanence for the life of the structure which indicates the very minimum of maintenance cost. These architects are particularly adept in solving the numerous problems of modern school architecture and realize the economy of tile on their cleverly designed roof construction.

Obviously, for schools there should be no compromise with quality and quality is the very essence of economy. Ludowici Tile Roofs cannot be equaled for economy first and *last*. We invite architects to consider tile roofs as the immediate solution in modern school architecture for protection and permanence. Samples and estimates will be gladly furnished on request.

LUDOWICI-CELADON CO.

Dept. AR2, 75 East Wacker Drive, Chicago 1, Illinois

565 Fifth Avenue
New York 17, New York

740 - 15th Street, N.W.
Washington 25, D. C.

12734 Woodland Avenue
Cleveland 20, Ohio

4801 Lemmon Avenue
Dallas 9, Texas

(*Continued from page 242*)

SPECIAL LIGHTING DEVICES TO SUPPLEMENT GENERAL LIGHTS

◀ **29. Solar Light Mfg. Co.** has introduced a new chalkboard lighting unit for installation above blackboards. Unit has a single row of fluorescent lamps and aluminum reflectors, reportedly gives an average of 50 ft candles to boards.

▶ **30. David Cummins and Associates, Inc.,** supplies a ready-made, self-illuminated bulletin board with plastic cover, fluorescent lamp. The standard unit is 20 in. wide by 30 in. high. Special sizes are available on order.

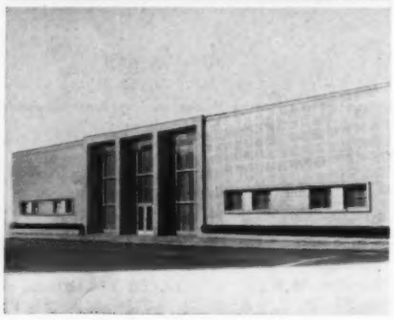
Keep Walls Dry

WITH CABOT'S CLEAR CEMENT SILICONE WATERPROOFING

Top: Architects: Lang and Raugland, Minneapolis, Minn.

Center: Architect: D. A. Bohlen, Indianapolis, Ind.

Bottom: Architects: Naramore, Bain, Brody, and Johnson, Seattle, Wash.



● ***For Cement, Stucco, Light Colored Masonry***

Cabot's Clear Cement Silicone Waterproofing seals all the pores and voids in above grade masonry — keeps water out! It prevents staining of interior walls and protects your walls against the damage of freezing and thawing.

● ***For Red Brick***

Specify *Cabot's Clear Brick Waterproofing* for red brick and dark colored masonry above grade. Keeps out moisture. Keeps surfaces clean . . . *prevents unsightly efflorescence.*

● ***For Masonry Below Grade***

Specify *Cabot's Foundation Coating* for all *below grade* masonry. Fills and seals pores with a black, bituminous, *elastic* coating that keeps cellars dry . . . prevents crumbling.

● ***Free Samples!***

Write today for full information.

SAMUEL CABOT INC.

229 Oliver Bldg., Boston 9, Mass.

▲ **31. E. Van Noorden Co.'s** *Vanco "Plexiglas" Domelites* are available in clear or white translucent plastic, can incorporate recessed fluorescent or incandescent light fixtures concealed by special, hinged *Ceilinglite* plastic panels.

▲ **32. Appleton Electrical Co.** announces a new vented *"AA-51" Series* lamp fixture for lights subject to damage or explosion hazards. The unit adapts to various mountings and domes, is easily interchanged with standby units.

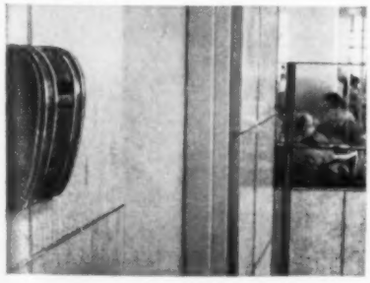
(*Continued on page 249*)

For the addresses of manufacturers whose products are mentioned, see page 262.

Specify Edwards and Be Sure

America's schools run more smoothly . . . America's school children are better protected thanks to Edwards.

Edwards clock and program systems provide an accurate, simple and flexible means of programming activities of large groups in schools, institutions, offices and industrial plants. A program instrument is used having as many circuits as there are different programs. Standard sizes contain 1, 2, 4, or 6 circuits. Signals may be sounded any minute, 24 hours a day, 7 days a week. With a signal control panel it is possible to change program or signal schedule in any room or location to another program without disturbing the overall program setting or wiring. The Edwards program instrument is powered by the same heavy duty Telechron motored movement used in the clock systems.



TRIM, MODERN, EFFICIENT:

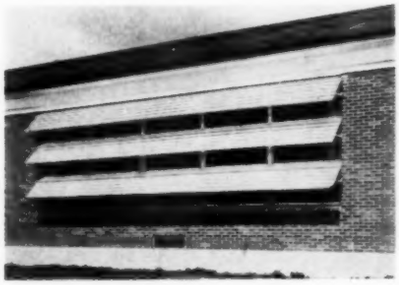
Edwards Fire Alarm Systems are chosen by leading architects to protect America's schools, hospitals and important buildings. Write for Bulletin on Fire Alarm Systems.

EDWARDS
protects . . everywhere!

AIA PRODUCTS

(Continued from page 244)

SUN CONTROL DEVICES REDUCE SCHOOLROOM GLARE AND HEAT



▲ **33. The Troy Sunshade Co.** markets a baked-enamel finish metal awning with horizontal louvers to reduce summer glare and heat without cutting off ventilation. The awnings are constructed of hot-dipped zinc-coated steel, and are said to be easily demountable. The installation shown uses three rows of awnings with a vertical drop of about 13 in.

DOMESTIC TYPE BOILERS HEAT SCHOOLROOM WINGS

▲ **34. General Electric** suggests a multiple unit installation of residential type oil boilers for school heating. Such a system was recently completed in the new Worcester County Senior High School in Maryland, with boilers installed in three separate locations in banks of four, four and three. Each bank serves a wing of the school for zoned regulation, has residential automatic controls. The system is said to cost less to install and operate, easier to maintain.

(Continued on page 252)

For the addresses of manufacturers whose products are mentioned, see page 262.

GUARD AGAINST FIRE IN YOUR ROOF DESIGN

INSULATE WITH
PERLITE CONCRETE

For insulated roof decks that will not contribute to the spread of fire, specify perlite concrete – the lifetime non-combustible insulation that actually improves with age!

Perlite concrete can be placed monolithically over metal lath, various form boards, metal decking or structural concrete. It eliminates fire spreading materials on the underside of the insulation because the concrete bonds directly to supporting surfaces and requires no bitumen or other combustible bonding agents to hold the slab in place.

Strengthens as it Insulates

Perlite concrete strengthens the deck as it insulates. For example, a 2½" thickness (1:6 mix) on ¾" rib metal lath on 24" centers carries 2½ times the design load of 50 psf with ¾ of the minimum allowable deflection. The complete insulated deck, including built-up roofing, has a "U" of 0.186 and weighs only 11.5 psf.

Perlite insulating concrete screeds smooth without steel troweling to form an ideal indentation-resistant surface for bonded built-up roofing.

Write for roof fill specification.

See our catalog in Sweets Files.

PERLITE INSTITUTE

10 E. 40th Street, New York 16, N. Y.

Tuf-flex Glass permits

Light, view and basketball go together, thanks to *Tuf-flex* Tempered Plate Glass, in this multi-purpose room at Alhambra Union High School, Martinez, Calif. Architect, John Lyon Reid, San Francisco.

NO FINER GLASS THAN

LIBBEY · OWENS · FORD

s new freedom in school design...

Inviting assembly room plus gym. Daylight Walls of *Tuf-flex* permit this gymnasium to double as a cheerful meeting room. Pacheco School, Ignacio, **Colo. Architect, John Lyon Reid, San Francisco.**

Now another limitation is lifted from school design. Through the use of *Tuf-flex** Tempered Plate Glass, boys, games and large, clear glass windows mix happily together.

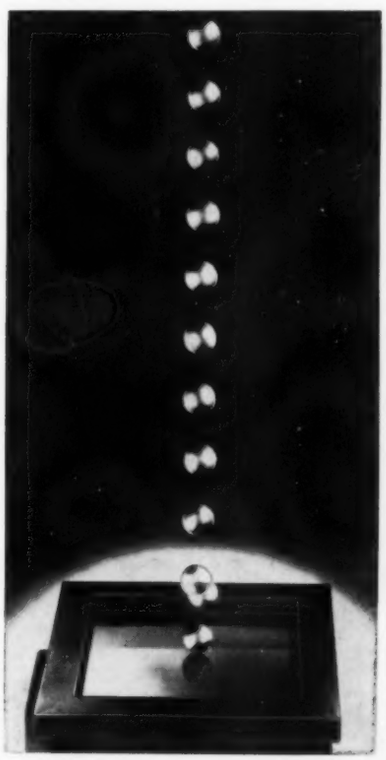
L·O·F *Tuf-flex* for school windows is $\frac{1}{4}$″-thick plate glass, heat-strengthened during manufacture to withstand greater impact.

Notice, in the adjoining illustrations, how resourceful architects have used *Tuf-flex* to bring light, view and spaciousness into gymnasiums that quickly convert to cheerful assembly rooms.

For more information on *Tuf-flex* and all the other standard and special types of L·O·F Polished Plate Glass, call your L·O·F Distributor or Dealer or write Libbey·Owens·Ford Glass Co., 7524 Nicholas Bldg., Toledo 3, O.

*®

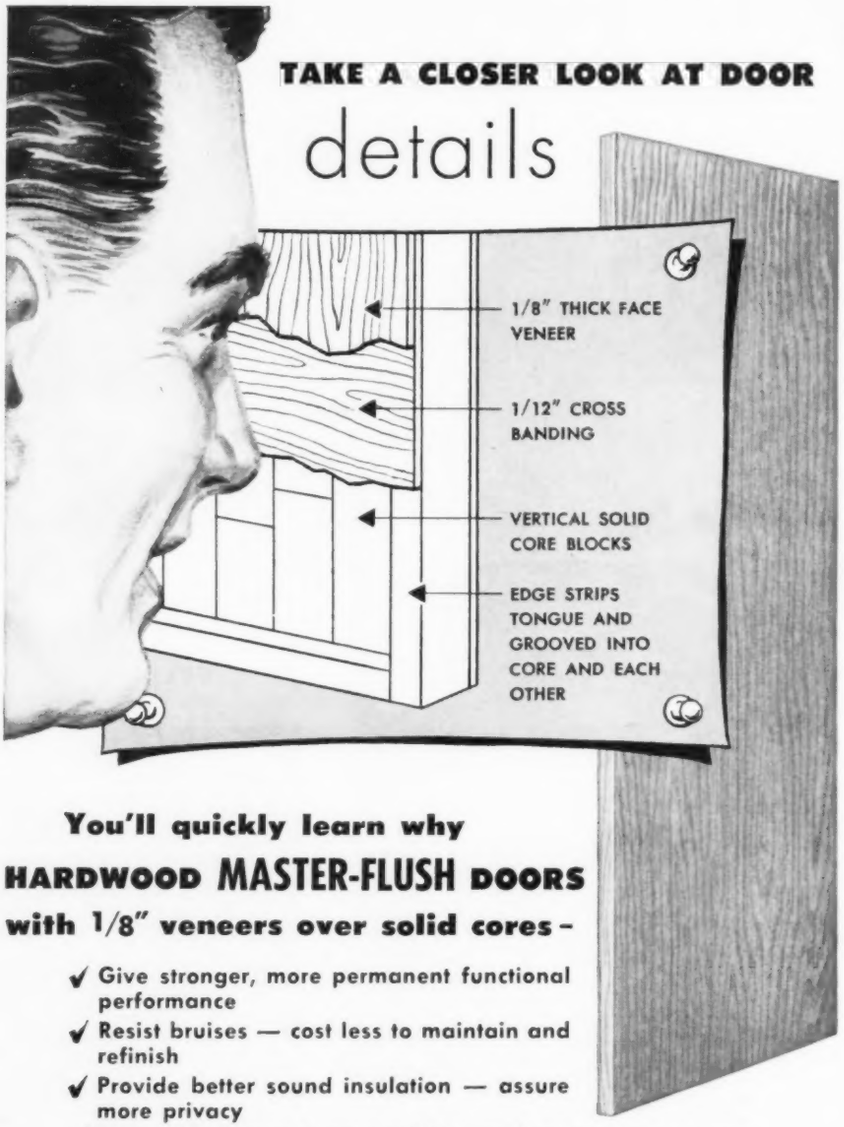
Playgrounds and windows go together and dangers and hazards of vandalism are reduced by using *Tuf-flex* in these windows at Beresford School, San Mateo, Calif. Architects, Kump and Falk, San Francisco.



Look at this test. This shows a half-pound ($1\frac{3}{8}$″ diam.) steel ball being dropped on a piece of $\frac{1}{4}$″-thick *Tuf-flex* from a height of ten feet and bouncing off without damaging the glass. If maximum resistance is exceeded, *Tuf-flex* disintegrates into small, relatively harmless pieces.

POLISHED PLATE GLASS

L·O·F GLASS Carrollite FIBER-GLASS


TAKE A CLOSER LOOK AT DOOR
details
1/8" THICK FACE VENEER
1/12" CROSS BANDING
VERTICAL SOLID CORE BLOCKS
EDGE STRIPS TONGUE AND GROOVED INTO CORE AND EACH OTHER

You'll quickly learn why

HARDWOOD MASTER-FLUSH DOORS

with 1/8" veneers over solid cores –

- ✓ Give stronger, more permanent functional performance
- ✓ Resist bruises — cost less to maintain and refinish
- ✓ Provide better sound insulation — assure more privacy
- ✓ Permit hardware, louvre or light applications in *any area.*

When you want the best for institutional requirements specify Hardwood Products' MASTER-FLUSH Doors—especially where unusually hard usage and abuse are expected. They feature Hardwood Products' *solid core* construction for exceptional strength and rigidity. This consists of vertical core blocks in alternate random lengths with edge strips tongue and grooved *into the core and into each other.* Cross banding for stability and additional strength — plus 1/8" thick face veneers hot plate press bonded, makes exceptionally solid unit. A full range of wood veneers is available. Consult Sweet's $\frac{15c}{HA}$ or write for further details.

Write for this brochure describing Hardwood Riverbank Sound-Insulating Doors in easy-to-understand sound decibel language.

NEW YORK
BOSTON • CHICAGO
CLEVELAND

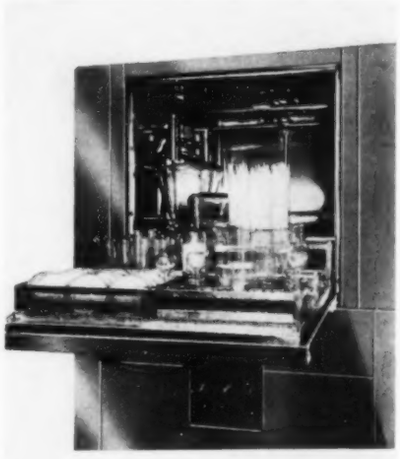
HARDWOOD PRODUCTS CORPORATION DOORS

HARDWOOD PRODUCTS CORPORATION • NEENAH • WISCONSIN

A-E PRODUCTS

(*Continued from page 249*)

SPECIAL PLUMBING FIXTURES DESIGNED FOR SCHOOL USE



▲ 35. Heinicke Instruments has introduced a series of patented laboratory glassware washers for processing glassware used in control and research. Three models are available, powered by high pressure jet systems. Glassware is washed, rinsed, and optionally distilled water rinsed. A difference in pressure holds the glassware in place in simple baskets. The units are claimed to faultlessly remove culture media, organic and inorganic chemical deposits, oils, waxes, etc., encountered in laboratory work.

▲ 36. Haws Drinking Faucet Co. offers a versatile deck type drinking fountain, *Series 2000,* for classroom use. The unit consists of a sturdy cast iron receptor which can be fitted with many possible combinations of fixtures—bubbler type drinking faucets, pantry faucets, fill glass faucets, double pantry type faucets for hot and cold water, or an emergency eye-wash fountain. The receptor measures 20 by 30 in. with a 4-in. ledge.

(*Continued on page 256*)

For the addresses of manufacturers whose products are mentioned, see page 262.

A complete vacation resort under one roof, the $3.5 million DiLido Hotel, Miami Beach's newest, opened last Christmas Eve, has 329 rooms, 9 stories, 2 swimming pools, 300 feet of ocean beach, 120 cabañas. Steeltex used in floors and roof. Melvin Grossman and Morris Lapidus, Architects. Robert L. Turchin, Inc., Contractors.

favorite for reinforcing newest hotels and apartments!

ing. It costs less to install than other types of forms and reinforcement for concrete because Steeltex can be rolled out like a carpet by one man (see photo below). Steeltex also saves concrete by minimizing leakage in the freshly poured slab—craftsmen on the floor below can continue working without getting drenched. Steeltex insures a strong floor because embedment of steel reinforcing takes place automatically (see note below). Steeltex allows concrete to cure slowly and properly—guards against excessive cracking—can be installed over any type of joist—will support ample safe loads from 109 lbs. to 886 lbs. per square foot depending on spacing of joists and thickness of slab. No wonder Steeltex is the overwhelming favorite with building designers in America's favorite winter resort.

Regardless of your locale, be it north, east, south or west, if your building plans call for poured concrete floors, roofs, plaster walls or ceilings or Portland cement (Stucco) exteriors, there's a type and kind of Steeltex reinforcing that will do the job better, faster, with less effort at lower overall cost.

See the Steeltex catalog in Sweet's or write for your free copy of a new 24-page, illustrated booklet "Pittsburgh Steeltex, Backbone of Concrete, Plaster, Mortar."

Algiers Hotel, Miami Beach, cost $1 million, has 8 stories, 200 rooms. Steeltex used in all floors and roof. Henry Hohauser & Associates, Architects. Taylor Construction Co., Contractors.

Prize winning Lanai Apartments, Miami, contains 24 units, took top honors in apartment house class in judging at A.I.A. South Atlantic Regional Conference in Miami last spring. Steeltex used only in second and third floors. Wahl Snyder, Architect. Alonzo Riley, Contractor.

STEELTEX®

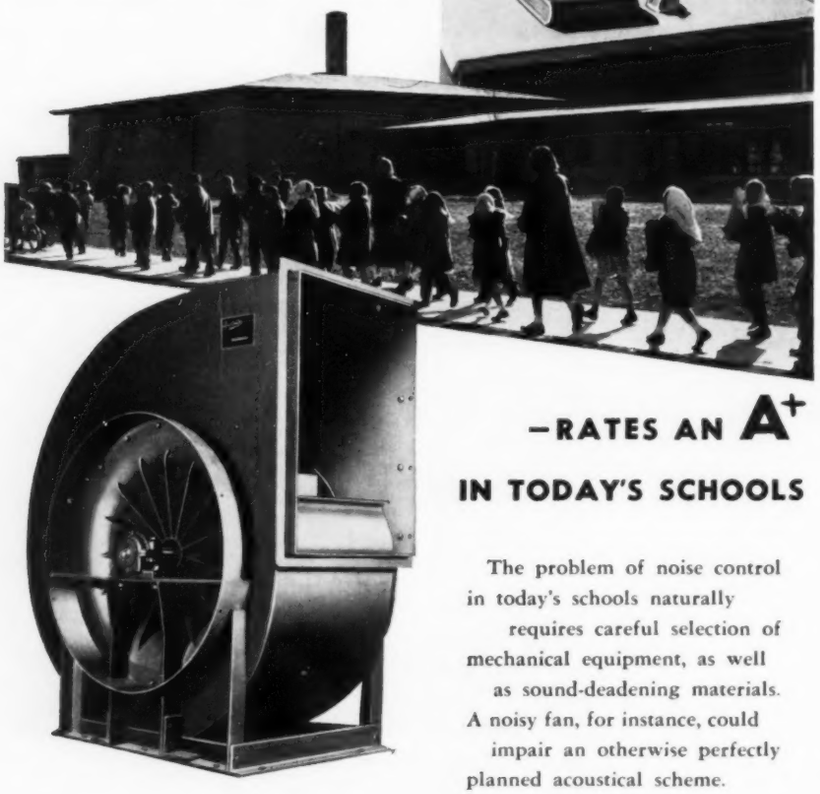
manufactured by the

Pittsburgh Steel Products Company

a *subsidiary of* **Pittsburgh Steel Company**

Pittsburgh 30, Pa.

THE **Quiet** PERFORMANCE OF THE NEW "BUFFALO" TYPE "BL" FAN



—RATES AN A+ IN TODAY'S SCHOOLS

The problem of noise control in today's schools naturally requires careful selection of mechanical equipment, as well as sound-deadening materials. A noisy fan, for instance, could impair an otherwise perfectly planned acoustical scheme.

"Buffalo" is proud to offer a new standard in low-decibel, high-efficiency fan performance. The new "BL" Fan handles air "without a ripple". Exclusive "Buffalo" guide vanes in the bell-shaped inlet "steer" air smoothly into the newly designed super silent rotor. Special backward curved blades move the air with the least possible turbulence. And finally, perfect static and dynamic rotor balance assure freedom from vibration.

"Buffalo"

Guarantee fulfillment of your plans by including "Buffalo" Type "BL" Fans. Engineering Bulletin F-100 for your files, on request.

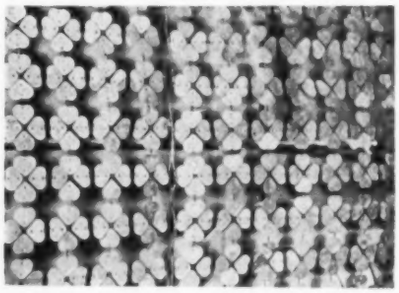
BUFFALO FORGE COMPANY
145 MORTIMER STREET BUFFALO 4, NEW YORK
Publishers of "Fan Engineering" Handbook
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

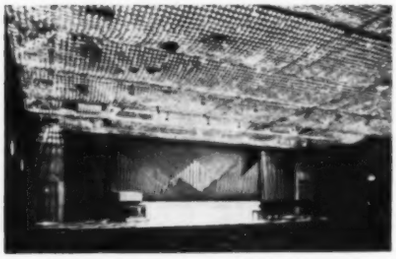
VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

A.E. PRODUCTS

(*Continued from page 252*)

DECORATIVE TREND IN NEW ACOUSTIC CEILINGS





▲ 37. Reynolds Metals Co. has recently manufactured a metallic "fish-net" acoustical ceiling in the concert hall of the Fine Arts Center at the University of Arkansas. The ceiling is made up of thousands of small heart-shaped sheet-aluminum stampings, strung together and draped over crosswise supports, which serve to break up and scatter the sound waves.

▲ 38. The Kelley Island Lime and Transport Co. has developed a new technique, called *Impressed Design*, to decorate their *Kilnoise* acoustic plaster ceilings: a simple casting plaster mold is impressed into the plaster surface while it is still in a plastic state.

(*Continued on page 260*)

For the addresses of manufacturers whose products are mentioned, see page 262.

Conditioning for $7.33 operating cost per tenant!

cuts cost—gives tenants individual climate control

In the new $12-million Woodner Apartments, Washington, D. C., 3,000 tenants in 1,140 apartments were cooled during the entire sweltering summer of 1953 by TRANE UniTrane room air conditioners . . . at an estimated cost of only $22,000 for electricity and cooling tower make-up water.

Slashes power requirements: With the UniTrane system, cooling (or heating) is used only where it's needed. Individual room units can be shut off in unoccupied rooms without affecting operation of any of the other units. Because ventilation air is brought directly through the outside wall into each room unit, there is no central ventilation system to operate.

Result: Operating load can be matched directly to fluctuating temperature requirements for lowest possible operating cost.

Tenants like UniTrane because it places climate control completely in their hands. Occupants of any size motel, hotel, office or apartment building can have the temperature they want, in *any* room, *any time*, day or night.

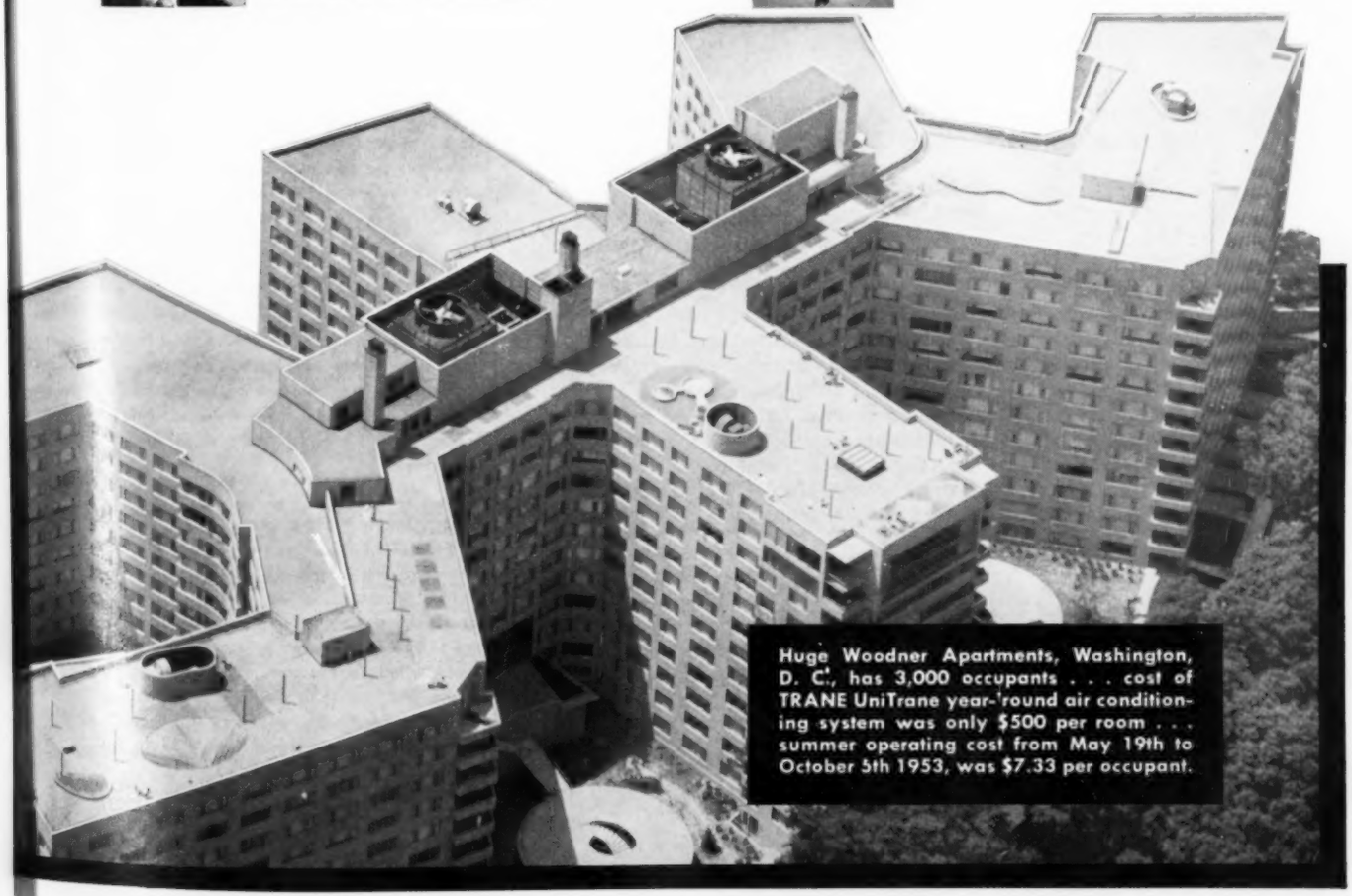
Owners like UniTrane because this unique combination of tenant advantages costs less to install, far less to operate. No central ventilation system to maintain—no complicated ventilation controls are required. All air, both ventilation and recirculated, is filtered at the unit. Rooms and decorations stay clean longer.

Architects welcome the savings in valuable floor space, design freedom. Units are available in all sizes and types—free-standing, recessed, semi-recessed, ceiling—for either exposed or concealed installation.

Engineers appreciate being able to plan full capacity for each space. They like the heavy-gauge construction, the quieter operation (each unit is sound-room tested before shipment.)

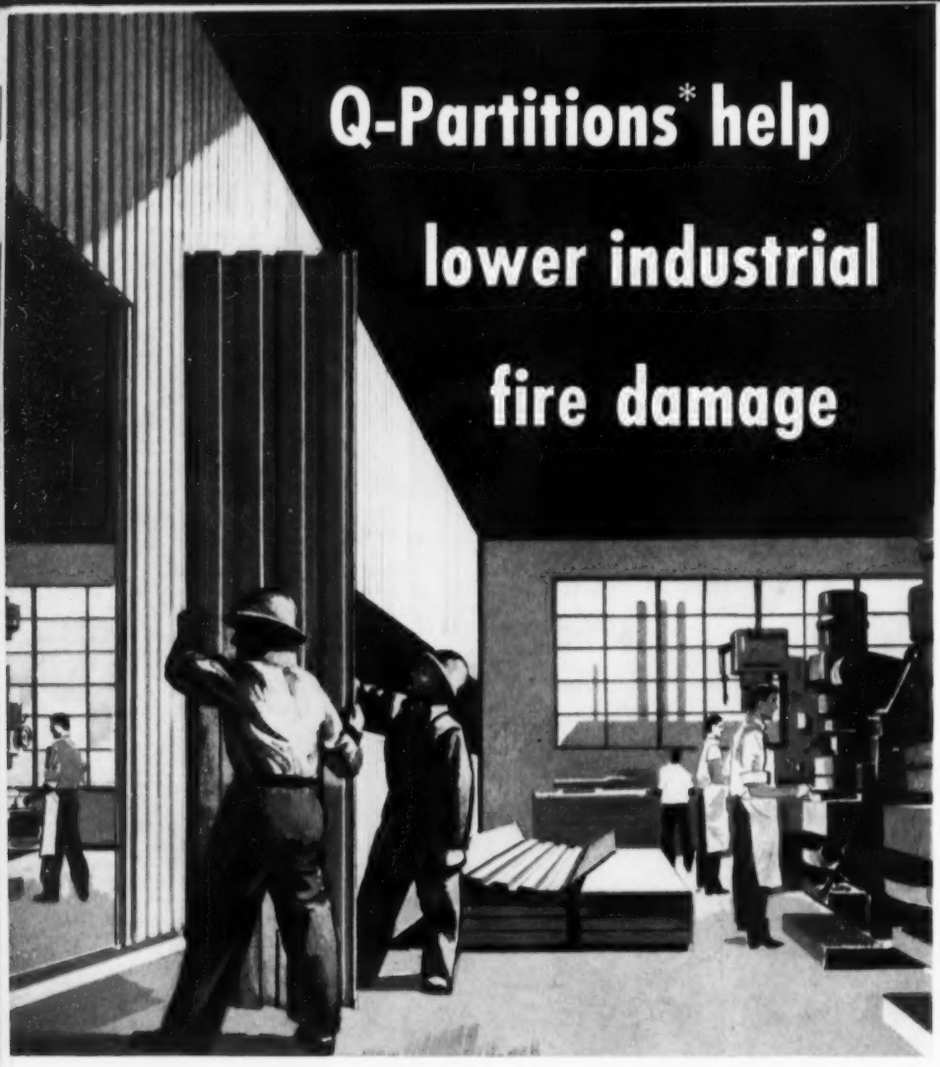
"Our 3,000 residents are delighted with the system which works well even at the worst of Washington's sweltering summer," says owner-architect Ian Woodner. "We compliment you on the quality of your installation and the soundness of its design and workmanship."

Award for outstanding new building of 1952 was presented to Ian Woodner by Washington Board of Trade. The building was judged by a distinguished panel of nationally-known architects.



Huge Woodner Apartments, Washington, D. C., has 3,000 occupants . . . cost of TRANE UniTrane year-'round air conditioning system was only $500 per room . . . summer operating cost from May 19th to October 5th 1953, was $7.33 per occupant.

Q-Partitions* help lower industrial fire damage



Fire prevention experts agree that one way to prevent costly industrial fires is to reduce large areas by the use of fire-resistive partitions. By doing so, fires that would tend to spread swiftly can be contained in a smaller area where they can be fought more effectively and brought under control. Robertson Two-Hour Fire Resistive Q-Partition is ideal for this purpose. Its installation will not interrupt production schedules . . . it is quick, clean, dry construction. It goes up while production goes on. And because it is clean and dry, there is no discomfort to employees, nor is there danger of dirt and dust injuring precision instruments or machines.

Robertson Q-Partition units arrive at the job-site ready for installation, and require a minimum of field work, scaffolding and working space. *They are easily and quickly demounted and re-erected elsewhere*, giving a freedom of planning and layout not possible with other types of construction. They are good looking and have a high factor of light reflection. A Robertson Two-Hour Fire Resistive Q-Partition unit consists of two 18 gauge rolled steel fluted sections (each 1⅝" deep) between which is sandwiched 1½" (three ½" layers) of gypsum board. Each unit or panel is 24" wide and made in lengths up to 22'0". Robertson Q-Partitions are listed and approved by Factory Mutual Laboratories. Write for literature.

Robertson

***Two-Hour Fire Resistive**

Q-PARTITIONS*

a product of **H. H. Robertson Company**

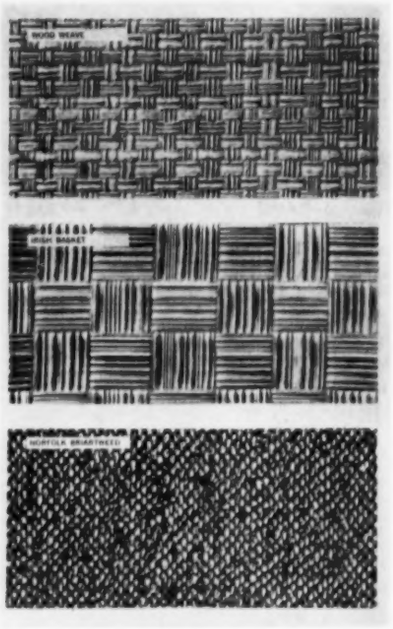
2404 Farmers Bank Building • Pittsburgh 22, Pennsylvania
In England—Robertson Thain Limited, Ellesmere Port, Cheshire
In Canada—Robertson-Irwin Limited, Hamilton, Ontario

World-Wide Building Service

AE PRODUCTS

(Continued from page 256)

NEW WALL SURFACING MATERIALS FOR SCHOOLROOMS



▲ **39. L. E. Carpenter & Co., Inc.** manufacture a new wallcovering fabric that is produced electronically, fusing a vinyl resin coating to a woven cotton backing, thus assuring considerable wear resistance. According to the manufacturer, the product, called *Vicrtex V.E.F.*, will remain smooth and firm on almost every type of wall. The fabric, which comes in 28 colors and 11 textures, reportedly will not crack, chip, peel or scratch, is stain and soil resistant, flame resistant on outer layers, and wipes clean with a damp cloth. Colors are fadeproofed. A few of the patterns available are illustrated above.

Due to the easy maintenance qualities of the fabric, the manufacturer especially recommends its use in schools for wall covering or for furniture upholstery.

• **40. Endur Paint Company, Inc.,** puts out an *Endur 2-24 Green* resurfacing material which is applied directly over old worn slate and composition blackboards. The material may also be applied directly to a smooth primed plaster wall to form a chalkboard surface. An application generally includes two coats with a light sanding of the final coat plus the general chalking-in process needed with most new chalkboards. Maintenance of the surface is claimed to be negligible.

(Continued on page 26[illegible])

For the addresses of manufacturers whose products are mentioned, see page 262.

Specify

NON-TARNISHING LUXURY HARDWARE

of ALCOA ALUMINUM at regular prices!

Leading manufacturers of builders' hardware are offering luxury lines of lock sets, escutcheons, hinges, window and cabinet hardware made of solid Alcoa® Aluminum. It's corrosion resistant through and through, with no finish to chip, no plating or lacquer to wear off. And it's priced no higher than old, outdated types!

Alcoa helped these alert manufacturers develop these beautiful, trouble-saving lines of aluminum hardware. We aided in developing the right alloys, the best fabricating methods, the satiny finish that beautifies many lines. Ask your hardware consultant or builder for complete details on builders' hardware made of Alcoa Aluminum. ALUMINUM COMPANY OF AMERICA, 1971-B Alcoa Building, Pittsburgh 19, Pa.

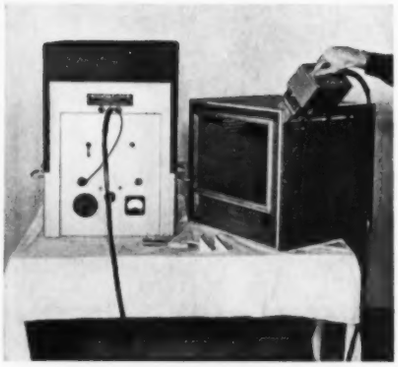
ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

(*Continued from page 260*)

ELECTRONIC MACHINE SPEEDS GLUEING OF FLOORS, WALLS

▶ **41. Woodwelding, Inc.,** announces an electronic *Woodwelder,* with its new *FC 2000 Synchro-tuner.* The high speed machine is actually a radio transmitter generating high frequency waves directly into the glue line, curing the resins. A flexible electrode works on curved and irregular surfaces, applies pressure and heat simultaneously, cuts out waiting for glue to dry.



REMOVABLE MULLION AND PANIC EXIT HARDWARE

▼ **42. Detroit Steel Products Co.** has redesigned its *Fenestra* hollow metal doors to include a removable center mullion between the doors to provide a wide opening for moving equipment in and out, and new heavy duty rim-type panic exit bolts. Surface application of the bolts is said to make operation more simple. Both doors operate as single units, with no overlapping astragal. Only one door of the pair has key control from the outside. The hardware is satin finish cast bronze.

designed with

SCHOOL CLASSROOM IN MIND!

HAWS Sink-Type Drinking Faucet Receptor

School classrooms may differ widely in their requirements. Realizing this, the new HAWS Sink-Type VANDAL PROOF Drinking Faucet Receptor was designed to accept practically any combination of HAWS Pantry Faucets—or Fill Glass Faucets—and HAWS bubbler-type Drinking Fountains.

● **The HAWS Receptor** is cast iron—beautifully finished in acid resisting white enamel. Stainless steel mounting rim prevents water running onto table or cabinet top and affords a water tight bond between sink and top surface.

Write today *for brochure illustrating combinations of HAWS fixtures that may be utilized with Receptor. You'll find a combination to fit the school job you have on the board or are now planning!*

HAWS DRINKING FAUCET CO.

1441 FOURTH STREET (Since 1909) BERKELEY 10, CALIFORNIA

The following addresses include manufacturers whose products are listed on the preceding pages

Pages 214-215

1. Equipment Manufacturing Co., Inc., 1400 Spruce, Kansas City 27, Mo.
2. New York Standard Blackboard Co., Inc., 225 Broadway, New York 7, N. Y.
3. United States Plywood Corp., 55 West 44th St., New York 36, N. Y.
4. Barber-Colman Co., Mill St., Rockford, Ill.
5. & 7. Adjustable Cabinets, Inc., 400 Scajaquada St., Buffalo 11, N. Y.
6. Lyon Metal Products, Inc., Aurora, Ill.
8. & 11. The Brunswick-Balke-Collender Co., 623 S. Wabash, Chicago, Ill.
9. William James Bargen, Waukegan, Ill.
10. American Seating Co., Grand Rapids, Mich.

Page 226

12. The Tolerton Co., 265 N. Freedom Ave., Alliance, Ohio
13. General Electric Co., Section 422-1A, Chemical Div., Pittsfield, Mass.
14. Lustric, Inc., 3235 Frankford Ave., Philadelphia 34, Pa.

Page 227

15. The Globe-Wernicke Co., Cincinnati 12, Ohio

(*Continued on page 266*)

IF YOU SPECIFY OR BUY FLUORESCENT FIXTURES:

Here is why General Electric believes you should insist on series ballasts for 96T12 lamps

Several years ago, our engineers studied the merits of the series-type ballast circuit for operating the 96T12 lamp at 425 ma. It showed real possibilities for economy, both in ballast cost and size. With concentrated efforts, a series ballast design for this lamp was perfected. Then for the first time, a series-type ballast circuit meeting all lamp requirements and giving full rated lamp life was made available to you.

Actually, there was nothing basically new about the series-type ballast. As early as 1940, our engineers had studied such a circuit. As new lamps were made available over the years, the series ballast was investigated time and again. However, prior to the 96T12 lamp, the potential savings of the series ballast circuit had been discarded because no way had been found to meet lamp operating requirements.

During those years the lead-lag ballasting circuit was widely used for the various types of lamps then available. Naturally, this type of ballast gained wide acceptance in the lighting industry as the standard of ballast quality.

After the 96T12 lamp was introduced, a series ballast was developed which proved to be the best ballasting tool for this important new lamp. However, there was real hesitancy about accepting a series ballast for the 96T12 because in the past, a lead-lag ballast had been found superior for other lamps.

We felt compelled to face this challenge and advocate the series ballast for the 96T12 lamp because, everything considered, we believe it is the best ballasting tool for that lamp—giving equivalent performance in accordance with lamp specifications and offering a very substantial saving in cost and size.

The results are now known throughout the lighting industry. Millions of series ballasts for operation of 96T12 lamps at 425 ma have been furnished to the industry in the last three years by ballast manufacturers. And because series ballasts for this lamp are inherently 20% less costly—even more millions of dollars in basic ballasting cost have been saved for fluorescent lighting users.

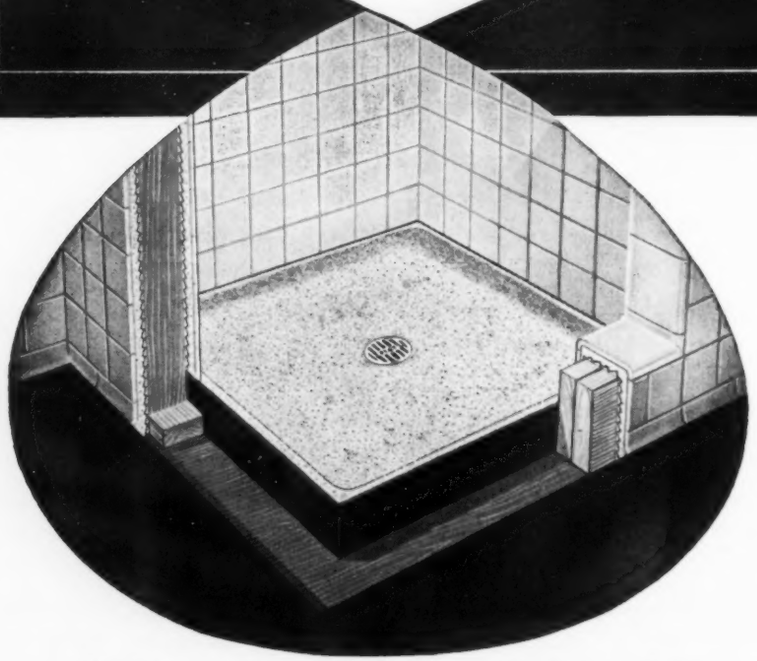
It will continue to be our policy to use our engineering know-how and detailed knowledge of lamp requirements to produce and promote the sale of the very best ballast or selection of ballasts for every type of lamp. Whether lead-lag, series, or trigger-start, in our sincere best judgment, they will always represent the best ballast design to meet lamp and industry requirements. General Electric Company, Schenectady 5, New York. 401-4

You can put your confidence in—

GENERAL ELECTRIC

Now BUILD BETTER SHOWERS FOR LESS with FIAT PreCast Receptors!

The ideal floor when shower walls are made of plaster, marble or tile of any kind—metal, plastic, ceramic!



Cut cost, save time—and eliminate one sub-contract by using FIAT PreCast Receptors. When you plan showers with plastic or metal tile walls you save labor—speed completion—by specifying a *plumber-installed* FIAT receptor. You will get a better shower floor . . . attractive . . . one-piece . . . permanently leakproof. There's no lead pan, no multi-layer construction—nothing that can be affected by building settlement. It's the modern, money-saving way to better shower construction.

SEND FOR FREE FIAT MANUAL—

COMPARES methods of shower floor construction
ILLUSTRATES receptor applications with various walls
PROVES many PreCast Receptor advantages

FIAT METAL MANUFACTURING COMPANY
9301 W. Belmont Ave. • Franklin Park, Illinois — Dept. C

Please send me your new manual on shower floor construction as soon as it's off the press.

Name_____

Address_____

City_____ State_____

A.E. PRODUCTS

(*Continued from page 262*)

The following addresses include manufacturers whose products are listed on the preceding pages

16. Lehigh Furniture Corp., 16 E. 53rd St., New York 22, N. Y.
17. Shwayder Brothers Inc., Samsonite Div., 1050 S. Broadway, Denver 9, Colo.
18. Seating, Inc. Dept. KP, 6045 Pillsbury Ave., Minneapolis, Minn.

Page 234

19. Hussey Mfg. Co., Inc., No. Berwick, Me.
20. Rol-Fol Table, Inc., 8467 Melrose Place, Los Angeles 46, Calif.

Page 238

21. Weber Showcase & Fixture Co., Inc., 5700 Avalon Blvd., Los Angeles 54, Calif.
22. Metalab Equipment Corp., Hicksville, L. I., N. Y.
23. John E. Sjostrom Co., 1717 N. Tenth St., Philadelphia 22, Pa.

Page 242

24. All-Steel Equipment Inc., Aurora, Ill.
25. Steel Service Manufacturing Co., Steubenville, Ohio
26. Fred Medart Products, Inc., 3562 Dekalb St., St. Louis, Mo.
27. Berger Manufacturing Div., Republic Steel Corp., Canton 5, Ohio
28. W. R. Ames Co., Bookstack Div., 150 Hooper St., San Francisco 7, Calif.

Page 244

29. Solar Light Mfg. Co., Chicago, Ill.
30. David Cummins and Assoc., Inc., 566 Broad St., Glen Rock, N. J.
31. E. Van Noorden Co., Boston, Mass.
32. Appleton Electrical Co., 1701–59 Wellington Ave., Chicago 3, Ill.

Page 249

33. The Troy Sunshade Co., Troy, Ohio
34. General Electric Co., Air Conditioning Div., 5 Lawrence St., Bloomfield, N. J.

Page 252

35. Heinicke Instruments, 2035 Harding St., Hollywood, Fla.
36. Haws Drinking Faucet Co., Fourth and Page Sts., Berkeley 10, Calif.

Page 256

37. Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.
38. The Kelley Island Lime and Transport Co., 1132 Leader Bldg., Cleveland 14, Ohio

Page 260

39. L. E. Carpenter & Co., Inc., Empire State Bldg., New York 1, N. Y.
40. Endur Paint Co., Inc., 75 North St., Salem, Mass.

Page 262

41. Woodwelding, Inc., 3000 W. Olive Ave., Burbank, Calif.
42. Detroit Steel Products Co., 3113 Griffin St., Detroit 11, Mich.

In 1953,
building product
advertisers put Architectural
Record ahead of the field
by more than 1,100 pages
of advertising—the
widest margin
in history!

F.W. DODGE CORPORATION

Architectural Record

"workbook of the active architect and engineer"

119 West 40th Street
New York 18, N. Y.
OXford 5-3000

Emporium Department Store, Stonestown Center, San Francisco, Calif. First presented to architects and engineers in Architectural Record. Architects and Engineers: Welton Becket F.A.I.A. and Associates. Photographer: Robert C. Cleveland.

Where Lighting Keeps Pace With
MODERN SCHOOL PLANNING

New Sylvania IC Fluorescent Fixtures meet highest standards of new Thomas Jefferson Junior High School, Clairton, Penna.

Notice the soft, well-diffused light provided by these Sylvania IC Low-Brightness Fluorescent Fixtures in this modern classroom installation. *Architect:* Joseph Hoover, Hoover Bldg., Pittsburg, Penna. *Electrical Engineer:* Elwood S. Towers, Investment Bldg., Pittsburgh.

In planning this handsome new junior high school, educational authorities, architects, and lighting engineers agreed that the new Sylvania IC Low-Brightness Fluorescent Fixtures met their strict requirements for uniform light distribution, quick easy installation, low maintenance, and attractive appearance. The 40-watt T-17 low-brightness lamps minimize reflected glare, and the excellent 42° crosswise shielding shields the lamps from direct view.

Writes Mr. Joseph Hoover, Architect of this up-to-the-minute school: **"In designing school buildings, we endeavor to provide the most efficient classrooms and facilities possible. The Jefferson Junior High is an example of this idea in operation. Essential to these requirements is proper lighting, providing even distribution, correct intensities, easy maintenance, low replacement, and competitive costs. We believe the Sylvania IC Units meet these requirements."**

Let us give you full information concerning the many advantages of Sylvania's new line of IC Fluorescent Fixtures. For illustrated folder simply address Sylvania, Dept. 4X-1302, today.

SYLVANIA

Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

In Canada: Sylvania Electric (Canada) Ltd., University Tower Bldg., St. Catherine St., Montreal, P. Q.

LIGHTING · RADIO · ELECTRONICS · TELEVISION

AE LITERATURE

(*Continued from page 216*)

* MECHANICAL SYSTEMS FOR CONSTRUCTION

Pamphlets describe two of Loxit Inc. developments of mechanical systems for the construction industry.

• *Loxit Acoustical Systems, Catalog A.C. 1954* describes the Loxit *Victory* acoustical system, used for mechanically applied surface installations as well as suspended jobs — or a combination of both.

• *Loxit Floor Laying System, Catalog F.L. 1954* tells of the Loxit wood floor laying system, designed to lay ordinary tongue and groove strip flooring mechanically, especially recommended for large areas and on concrete slab construction. *Loxit Systems, Inc., 1217 W. Washington Blvd., Chicago 7, Ill.*

* LIGHTING SYSTEMS

Four booklets that describe various lighting systems manufactured by the Benjamin Electric Mfg. Co. for industrial and commercial buildings:

• *Floodlight Equipment for Industry and Commerce, Bulletin fl* gives lighting data, specifications, floodlighting design procedure and projector accessories for the company's 13 or so different floodlight units. 59 pp, illus.

• *Lighting Equipment for Industry and Commerce, Bulletin le* lists and illustrates 27 different types of incandescent lighting units, equipment and "unit packages" and 15 fluorescent units or systems manufactured by Benjamin. 49 pp, illus.

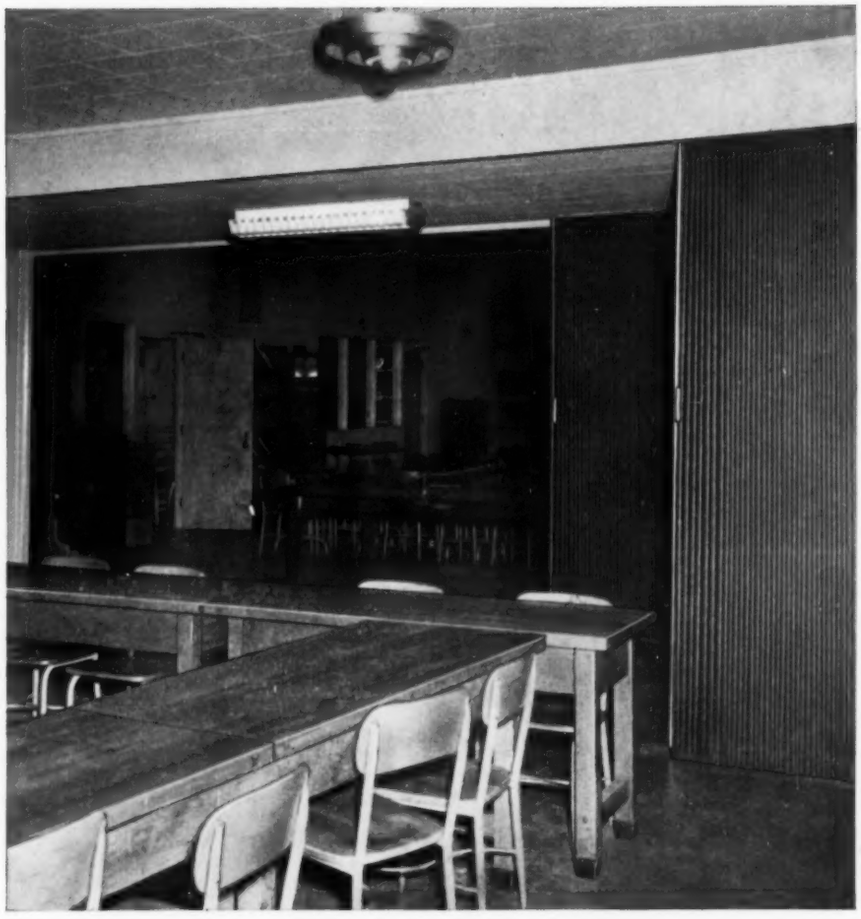
• *Vapor-Tight Incandescent Lighting Equipment, Bulletin vt* shows the Benjamin lighting equipment for heavy duty, recommended by them for such locations as railroad roundhouses, shower rooms, barns and other farm outhouses, breweries, packing houses and cold storage plants. Featured in this booklet are *Vapolets* available for ceiling, angle, and pendant type lighting, and hand portable units. 15 pp, illus.

• *Benjamin Fluorescent Lighting Systems, Bulletin fe* gives lighting data, illustrations, applications and specifications of fluorescent lighting for industrial and commercial locations. Included is a *Room-Size "Grid-lite"* system, recommended by the manufacturer for school rooms, which they claim gives predetermined ranges of ft candle levels, eliminating the need for calculating,

(*Continued on page 274*)

"Modernfold" doors turn a "dead" corridor into a "live" classroom

Yale High School, Yale, Michigan, saved dollars on its building budget by turning corridors into usable classroom space. When the large "Modernfold" doors are closed, area shown contains two classrooms and a dividing corridor. Open, the same area becomes one large classroom—big enough to hold large evening adult education classes.



Your ideas come to life... for life with "MODERNFOLD" doors

For every room division or door closure problem, there's a simple, economical, space-saving solution. That's "Modernfold," the original folding door.

Specifying "Modernfold" doors keeps clients happy. For these steel framed, vinyl-covered doors can't be equaled *anywhere* for quality of design . . . for quality and strength of materials.

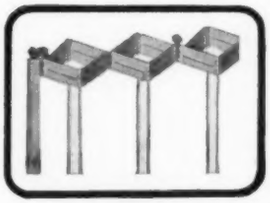
And because this line is *complete,* you're sure to save time and get exactly what you want when you specify better looking, easier operating, longer lasting "Modernfold" doors.

Sold and Serviced Nationally

NEW CASTLE PRODUCTS, INC., NEW CASTLE, IND.

In Canada:
New Castle Products, Ltd., Montreal 6.

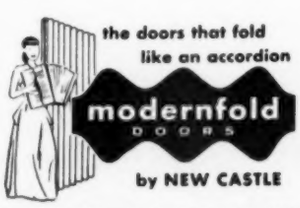
Better Looking
Fabric covering conceals all operating mechanism. No cornice needed. Adjustable trolleys keep doors hanging flush to jamb.



Longer Lasting
Balanced hinge construction both top and bottom. Trolleys attached at hinge intersections. No sidewise twist or pull possible.

Better Background
Over 100,000 "Modernfold" doors now in operation—a backlog of space engineering experience that's your guarantee of satisfaction.

YOU CAN'T GET MORE IN A FOLDING DOOR



Copyrighted New Castle Products, Inc., 1954

New Castle Products, Inc.
P. O. Box 881
New Castle, Indiana

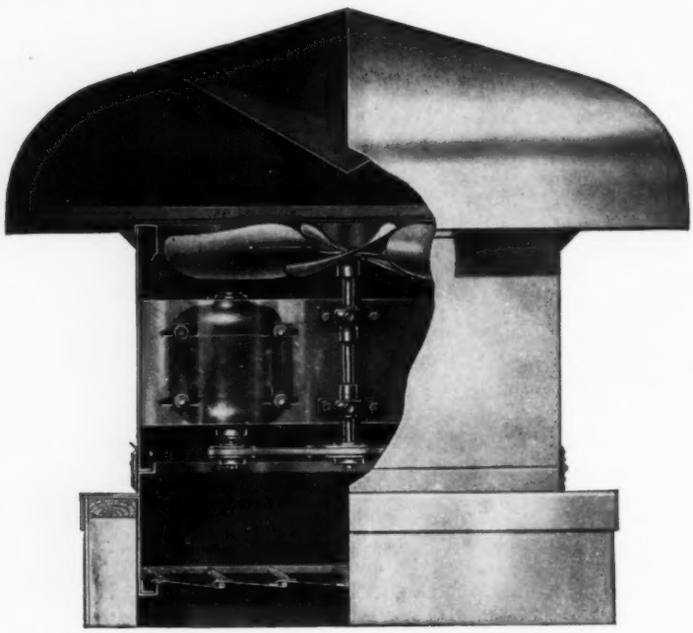
☐ Please send full details on "Modernfold" doors.

Name.....

Address.....

City.....*County*.....*State*.....

HIGH EFFICIENCY
LARGE CAPACITY
QUIET OPERATION
INCONSPICUOUS IN USE



THE NEW
BURT LOW TYPE
FAN VENTILATOR

This versatile Burt Ventilator is modern in engineering and design. Its quiet power-driven fan performs with equal efficiency to exhaust heat, smoke and fumes, or to supply fresh air. Low in height, the Burt Low Type meets architectural demands for an inconspicuous roof ventilator yet provides high efficiency and high capacity. Easy to install and service, the Low Type is available with fans from 12″ to 60″ in diameter—direct motor driven or V-belt drive. See Sweet's for further data or write Burt for Bulletin SPV-16.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company

48 East South Street, Akron 11, Ohio

MEMBER POWER FAN MANUFACTURERS ASSOCIATION

AIA LITERATURE

(*Continued from page 270*)

finding the number of lamps needed, etc. 216 pp, illus.

These four booklets are available on request from the *Benjamin Electric Mfg. Co., Des Plaines, Ill.*

* DISPLACEMENT CAISSONS

New 12 page brochure describing Franki Displacement Caissons (or "Pressure Injected Spread Footings), the *Franki Foundation Company* illustrates jobs done in this country by the firm since it was formed two years ago. The methods, results, tests, requirements for design and firm, fixed-price quotation policy are all covered in this booklet. *Franki Foundation Co., 114 E. 40th St., New York 16, N. Y.*

* INSULATING LARGE BUILDINGS

A new catalogue, *Foamglas*, has been prepared by the Pittsburgh Corning Corp., listing condensed specifications for the application of *Foamglas* in walls, ceilings, floors, roofs, perimeters and in low temperature space insulation. Complete information on all accessory materials is also listed. The catalogue, which also features many photographs of actual installations, describes the physical properties, characteristics and performance data of the cellular glass insulation. 24-pp, illus. *Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22, Penna.*

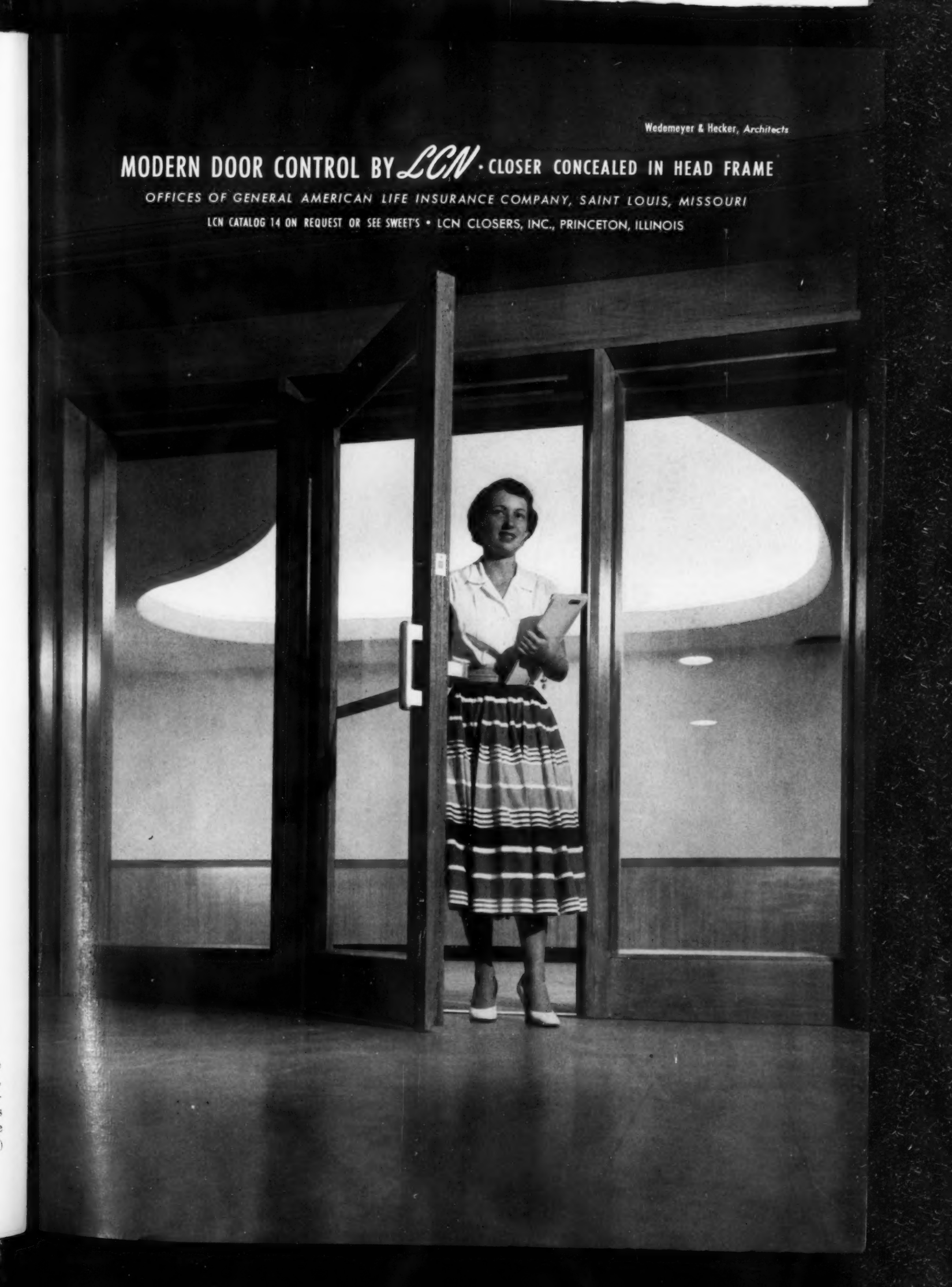
* KITCHEN AND LAUNDRY PLANNING

Storage Cabinets and Accessories is an up-to-date set of specification sheets covering the 1954 line of General Electric major appliances. Included are plans for combining kitchen and laundry as one work saving center. 23 pp, illus. *General Electric Co., 310 W. Liberty St., Louisville, Ky.*

* ROOFING AND SIDING

Alcoa Aluminum Roofing & Siding. Booklet describes the maintenance-free characteristics of aluminum as a building material, and, in detail, the easy and efficient methods of applying Alcoa corrugated industrial roofing and siding along with comprehensive drawings. Application methods outlined include fasteners such as self-tapping screws, Nelson Rivweld studs and Widman fasteners. Accessories for application of this roofing and siding are detailed, as are

(*Continued on page 278*)


Wedemeyer & Hecker, Architects
MODERN DOOR CONTROL BY LCN · CLOSER CONCEALED IN HEAD FRAME
OFFICES OF GENERAL AMERICAN LIFE INSURANCE COMPANY, SAINT LOUIS, MISSOURI
LCN CATALOG 14 ON REQUEST OR SEE SWEET'S • LCN CLOSERS, INC., PRINCETON, ILLINOIS

Safer than Slippery Flooring

A matador is aware of the risks in his job but because SLIPPERY FLOORS GIVE NO WARNING—often look safe—workmen can be killed or hurt before they know *their* danger! A practical remedy is A. W. SUPER-DIAMOND—tough, rolled-steel floor plate with an exclusive, engineered raised-diamond surface. SUPER-DIAMOND puts 40 anti-slip traction points in every footstep—gives maximum foot safety at low cost. Investigate SUPER-DIAMOND for accident prevention. Write for new Booklet SD-19.

A.W. SUPER-DIAMOND

ALAN WOOD STEEL CO. ESTABLISHED A.W. 1826 CONSHOHOCKEN, PA.

Economy Rolled Steel Floor Plate

ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

Other Products: A.W. ALGRIP Abrasive Rolled Steel Floor Plate Plates • Sheet • Strip • (Alloy and Special Grades)

A-E LITERATURE

(*Continued from page 274*)

loading tables and weight and coverage tables. Drawings present roofing and siding details on basic types of industrial structures, and on the construction of an insulated industrial wall. 16 pp., illus. *Aluminum Co. of America, 804 Alcoa Bldg., Pittsburgh 19, Pa.*

MODERN ELECTRICAL LIVING

Easier Living Within Your Power Electrically describes fully the "Package Plan" by Arrow-Hart & Hegeman Electric Co., which provides all the wiring devices needed for the home offered in one package. This booklet also contains many design ideas, illustrations and diagrams. For convenience, the portion of the booklet devoted to the "Package Plan" is available separately in an eight page folder, "Know What You Need to Enjoy Electrical Living Today and Tomorrow." The manufacturers suggest that this folder be used as a work sheet in aiding customer to determine their electrical needs. 39 pp., illus. *The Arrow-Hart & Hegeman Electrical Co., Hartford, Conn.*

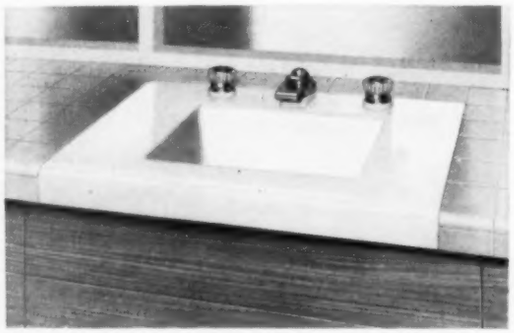
LITERATURE REQUESTED

The following individuals and firms request manufacturer's literature:

- Ward Beaumont Whitwaur, Architect, 220–221 Kresge Bldg., Sioux Falls, S. D.
- E. A. Clarke, Student, 17 Overlook Rd., Randolph, Mass.
- Nicholas Diaman, Student, Rt. 2, Box 481, Lodi, Calif.
- W. N. C. Potter, Architect, 36a Terry Rd., West Ryde, Sydney, N.S.W., Australia.
- Per Rundberg, Architect-Designer, 3070–25th Ave., San Francisco, Calif.
- J. Arthur Setaro, Architect, 14 Raymond Pl., Danbury, Conn.
- E. H. Amort, Student, Roseggerstr 23, Linz/Danube, Austria.
- T. J. Szutowicz, Instructor, State University of N. Y., L. I. Agricultural and Technical Inst., Farmingdale, N. Y.
- Jack Stef, Student, 105 E. Nittany Ave., State College, Pa.
- Waisman and Ross, Architects, 308 Great Western Bldg., 356 Main St., Winnipeg, Man., Canada.

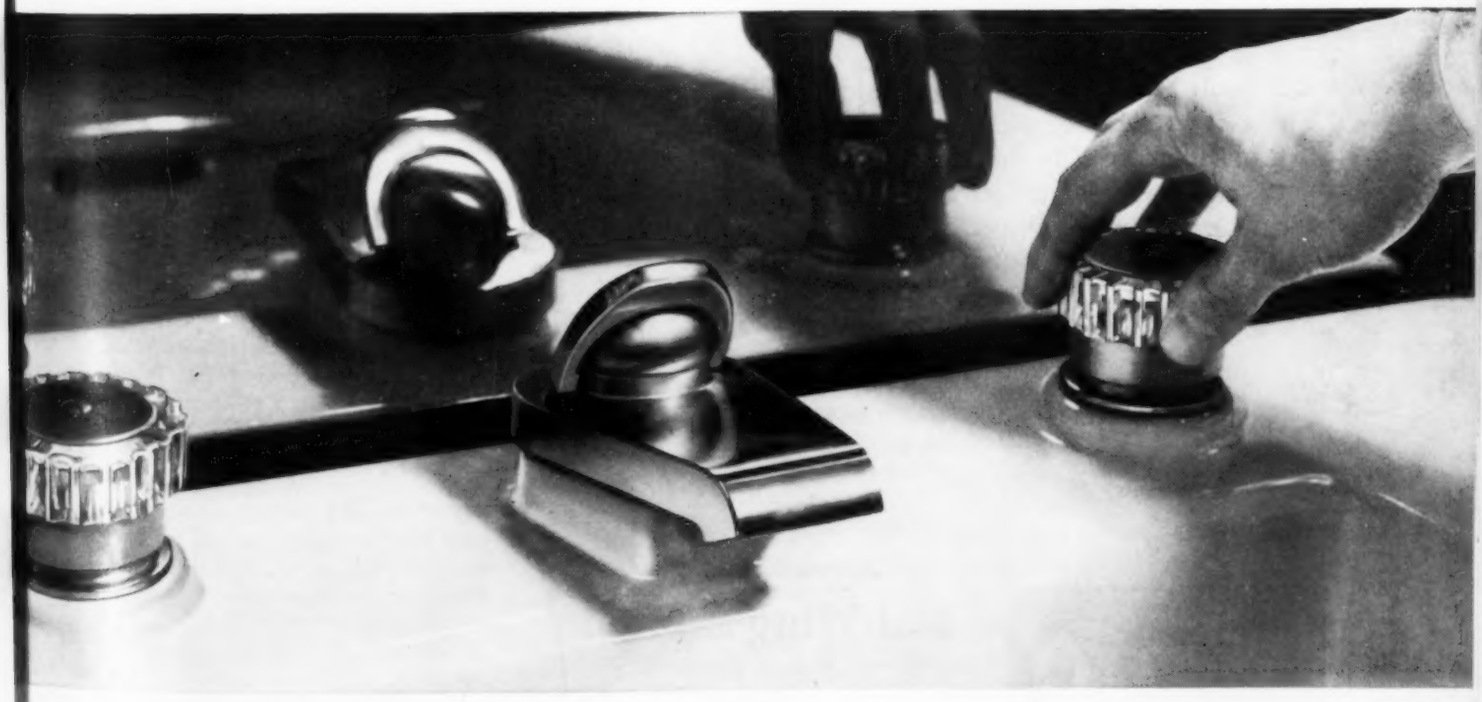
ANY WAY YOU LOOK AT IT— CRANE CAN HELP YOU

When asked to name a preference in plumbing, most people choose Crane. In fact, on all counts—design, quality, workmanship and long life—Crane is the preferred plumbing.



Crane Criterion lavatory, styled by Henry Dreyfuss, either fits into counter-top or stands alone on brush-finish chromium-plated legs. Dial-ese controls, Securo waste, choice of eight Crane colors. Two sizes: 21½" x 17¾" and 30¼" x 22".

Naturally, Crane is the choice of leading architects, too. When you recommend Crane you can be sure your clients will be pleased with its modern styling, its easy and dependable operation.



In addition to the public preference enjoyed by Crane, other Crane product advantages include the availability of a complete line of sizes and types—the widest choice of modern plumbing fixtures, trim and color—to suit any plan and any budget.

For detailed information, see your Crane Branch or Crane Wholesaler—today.

CRANE CO.

GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO 5
VALVES . . . FITTINGS . . . PIPE . . . PLUMBING AND HEATING

"...Let's cut this stack off here and put a Wing Draft Inducer on the boiler...We'll save the cost of the chimney, have better draft and a better looking building."

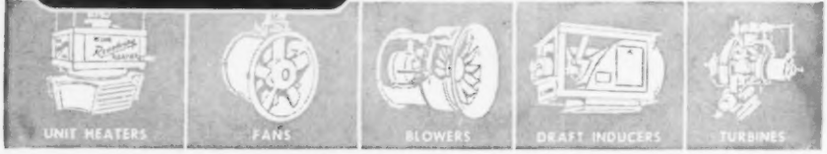
If you are building or rebuilding or increasing the size of your boiler plant, a costly, tall chimney can add considerably to the expense. And a well planned architectural design can be ruined with an unsightly, towering stack.

WING DRAFT INDUCERS eliminate this problem, providing positive, adequate, uniform draft regardless of surrounding conditions, or variable weather. They cut operating costs too, by giving higher CO_2's. Smoking is reduced or eliminated. Higher boiler capacity is possible.

Write for Bulletin I-52

Wing

L. J. Wing Mfg. Co.
151 Vreeland Mills Road
Linden, New Jersey
Factories: Linden, N.J. and Montreal, Can.



THE RECORD REPORTS

WASHINGTON

(*Continued from page 38*)

portant turn in the government's attitude toward the vast complex of housing and related matters.

At the other end of the scale there were those, of course, who said many of the proposals contained in the lengthy recommendations would never be acceptable to the 83rd Congress and some went so far as to call the report downright disappointing.

Among the latter was Ira S. Robbins, New York City, president of the National Housing Conference. He said the findings fell far short in their long-range aspects. He was critical of the committee's failure to suggest an exact size for the public housing program it recommended. Talking in terms of a program of not more than 35,000 homes a year is but a token recognition of the nation's needs, he said, adding:

"If we are to face up to the problem, the least that we should have is a return to the provisions of the Housing Act of 1949, calling on the President to exert his maximum authority under that Act to provide 200,000 new low-rent homes a year until the 810,000 new homes approved in 1949 have been built."

It was noted that since the enactment of the 1949 housing law, 187,199 public units have been built or are under construction.

"Conservation" Approach Hit

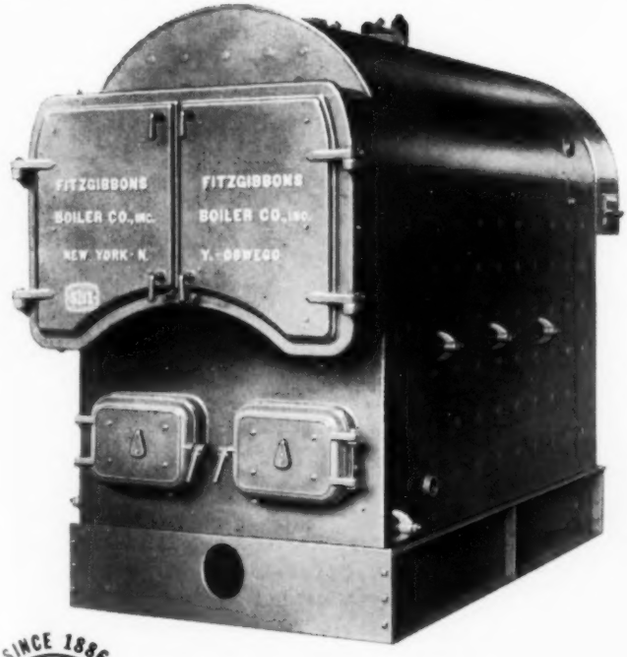
NHC termed it "unfortunate" that the emphasis of the whole committee's report "(was) placed on the conservation and rehabilitation of existing homes and neighborhoods." Mr. Robbins claimed that — standing alone — that part of the program actually would reduce housing supply, leaving no place for the rehousing of displaced families unless an adequate low-rent public housing program was available.

Commenting on the entire document the NHC executive observed: "The committee might have approached its task by ascertaining the housing needs of the nation and by evaluating the merits and shortcomings of present programs in the light of their ability to provide adequate housing, old and new, in satisfactory neighborhoods, for the vari-

(*Continued on page 284*)

THE NEW LORD & TAYLOR STORE IN WEST HARTFORD, CONN.
Architect: Irving W. Rutherford, Hartford, Conn.
Consulting Engineer: Harry H. Bond, New York, N. Y.
Heating Contractor: Eugene J. Brandt & Co., Inc., New York, N. Y.

As modern as the store it serves



THE FITZGIBBONS "D" TYPE STEEL BOILER is the choice for today's modern building because of its proven ability to provide up-to-date standards of comfort with lowest operating costs. Fitzgibbons design has no equal, and construction meets and frequently exceeds, ASME Code requirements. Its fine reputation among building owners, architects and engineers is further evidence of the kind of performance you can be sure of obtaining with a modern Fitzgibbons boiler installation. For complete details on the Fitzgibbons "D" Type boiler, write the Fitzgibbons Boiler Company, 101 Park Avenue, New York 17, N. Y. Ask for Catalog AR-2.

SINCE 1886 MOST ECONOMICAL IN FUEL 1886 THE FITZGIBBONS BOILER

The Fitzgibbons Boiler®

SBI

Healthy Floor for National Institutes of Health . . .

Terrazzo

The National Institutes of Health, at Bethesda, Maryland, is interested in longevity. Few things it can possibly do will insure longer life than that possessed by the TERRAZZO floor illustrated.

Marble-hard TERRAZZO presents a smooth and jointless surface to traffic. No matter how extensive traffic becomes, TERRAZZO withstands its ravages. No matter how indifferent the maintenance, TERRAZZO's life expectancy equals — or exceeds — that of the building it graces.

Specify low-annual-cost TERRAZZO — and build for permanence. Free AIA Kit upon request. See our catalog in Sweet's.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

404 SHERATON BUILDING, 711-14th STREET, N. W., WASHINGTON 5, D. C.

THE RECORD REPORTS

WASHINGTON

(*Continued from page 280*)

ous income groups, a procedure long advocated by the National Housing Conference. Such a study could have been followed by recommendations aimed to remedy the deficiencies uncovered. The committee, however, ignored the comprehensive approach and proposed a series of amendments to the existing programs which fail to indicate how they are geared, if at all, to meet the nation's housing needs in terms of quantity and at sale and rental figures appropriate to families in various income categories."

"*Vital Omissions*"

Getting more specific, Mr. Robbins said vital omissions included such problems as relocating families displaced by slum clearance for private redevelopment, and those displaced through rehabilitation of existing buildings; the construction of express freeways; parks and other necessary community improvements; the inadequacy of rental housing; the lack of middle income housing; cooperative housing and homes for minority groups.

Failure of the committee to support a research program was described as "short-sighted."

A Vote for Fannie May

Admitting that the country needs effective secondary market facilities for rental housing, middle income and veterans housing, Mr. Robbins said the committee's recommendations on this score would not serve these needs. The NHC said it stood for continuation of the existing Federal National Mortgage Association program pending adoption of workable substitutes.

About interest rates: "The committee's proposals regarding interest rates and service charges on government insured and guaranteed mortgages would increase the cost of home ownership for low-priced homes and homes in rural and suburban areas. In these areas bolder measures are required."

The proposed liquidation of present Federal aids for defense housing, prefabrication, community facilities, and the proposed transfer of aids to school and international housing also were opposed. The NHC recommended that the

(*Continued on page 288*)

HERE is the plywood form ready to receive the 3" wide masonite strips that will assure proper SKYTROL placement. Note that the panel is sloped for drainage.

Here's how functional toplighting goes in with

SKYTROL*

Glass Blocks

Panels of SKYTROL Glass Blocks are easy to detail and easy to install. They let in lots of useful daylight, yet their high insulation value keeps heat loss and condensation to a minimum. Because SKYTROL panels aren't packaged units, and there are no narrow orientation limits—they allow complete design freedom.

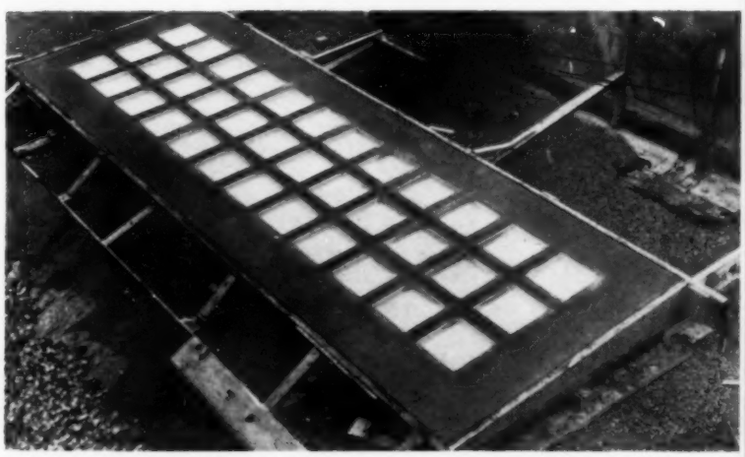
Write us today and we'll send you the full SKYTROL story by return mail.

Pittsburgh Corning Corporation
PITTSBURGH, PA.

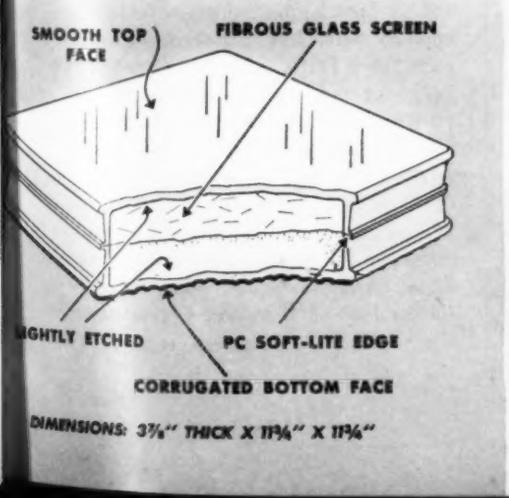
*T. M. Reg. Applied For.

DEFORMED steel reinforcing bars (¼" to ⅝" depending on panel area) are wired onto "chairs" to keep them about ½" above the bottom of the panel face.

CONCRETE is kept on the dry side (3" maximum slump) and is vibrated to eliminate voids in the reinforced concrete web. Sandbags eliminate possibility of block disalignment during vibrating.



HERE'S the finished panel. After seven days of wet curing, the SKYTROL panel is ready for long-life, maintenance-free service.



PITTSBURGH PC CORNING ®

Pittsburgh Corning Corporation
Dept. C-24, One Gateway Center
Pittsburgh 22, Pa.

Please send me more information about PC SKYTROL Blocks for toplighting.

Name .....

Title .....

Firm .....

Address .....

City ..... Zone... State.....

advance planning of public works and community facilities be expanded in the face of current declining employment.

NEW METHODS SOUGHT FOR HOUSE REPAIR FINANCING

The U. S. Chamber of Commerce last month had added its voice to the clamor for new financing methods to support the growing market in housing rehabilitation.

Not only a broader statute, but a more flexible administrative attitude on the part of Federal Housing Administration were among the Chamber proposals. FHA, in its beginning, did not distinguish between existing and new building as to financing terms. As it developed, however, more preference was shown for new construction.

This shift in emphasis left the used-house market at a disadvantage.

Four-Step Program

The National Chamber proposed that this situation be remedied by two steps: "(1) a re-equalization of the terms for both markets, and (2) by eliminating the rigid dogmatism of FHA underwriting procedures which would impose one set standard on all types of houses in all types of neighborhoods and communities."

This actually was one of four broad measures the Chamber advocated as steps to facilitate the financing of repair and improvement work. These moves should be designed, it said, to encourage people to keep their properties in good condition through their own free decisions rather than under the pressure or direction of authority.

The other suggestions for facilitating the financing of this important market were these:

— Maintain an adequate system of consumer credit for minor repair and maintenance work.

— Encourage the wider adoption of the "open-end" mortgage for financing more costly improvements and alterations.

— Encourage the use of the "package" mortgage to make possible the financing of equipment along with other work in a single loan.

The proposals were contained in one of the Chamber's Construction Markets letters, issued by its Construction and Civic Development Department, of which Norman P. Mason is chairman.

Broadening Title I

Also contained in the letter was a cautious endorsement of the Administration proposal that Title I of the National Housing Act be liberalized, that the improvement loan limits be raised as one means of dealing with the rehabilitation market problem. Said the Chamber committee: "The use of FHA's Title I program might be broadened by somewhat increasing the maximum loan limits which now stand at $2500 for one-family houses and $10,000 for structures with two or more dwelling units. However, when the size of the repair operation goes beyond a few hundred dollars, the costs necessarily involved in consumer financing become excessive. For the larger jobs, methods of financing must be sought which will give the lender — and insurer — greater se-

(*Continued on page 292*)

the Emblem of Quality since 1875 FARADAY

Modern
...compact...dependable...

NEW FARADAY *Phonacall*
STATION CONTROL UNIT

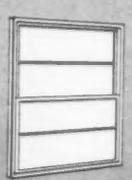
SAVES TIME!

Nurses can save many steps and serve patients faster, where a Faraday Phonacall System is used. Phonacall eliminates time-consuming trips to answer simple requests—introduces *new* efficiency.
Phonacall is designed especially for hospital service—and each system is individually planned to *best* serve the hospital where it is installed. Write for further information.

- Complete volume control—for both talking and listening.
- Push-button control. Easy to operate.
- Equipped with both audible and visual signal.
- Compact. Uses minimum desk space.
- Distinctive, durable, hammer-tone gray finish.

HOLTZER-CABOT **FARADAY** STANLEY & PATTERSON
CONSOLIDATED BY:
SPERTI FARADAY INC. ADRIAN, MICH.
BELLS · BUZZERS · HORNS · CHIMES · VISUAL & AUDIBLE PAGING DEVICES AND SYSTEMS

Coleytown District School, Westport, Conn. Architect: Lyons & Mather, Bridgeport, Conn. Contractor: William J. Lyons Co., Inc., Norwalk, Conn. Windows: Lupton Master Aluminum Projected Windows.



Standardized for savings . . .

There are no dark corners in this efficient, new school. Continuous bands of Lupton Master Aluminum Projected Windows flood every room with natural daylight. The windows were standard in design and construction, but with ventilating sash at the sill only. In effect, custom windows, without the premium of custom prices.

This saving, through adaptability of standard designs, is one of many gained when you specify Lupton Windows. Long window life means additional savings. The extra deep members of Lupton Master Aluminum Projected Windows assure the strength needed in the over-size windows popular today. Maintenance savings are considerable too. These aluminum windows will never need paint. They'll never get paint clogged, will always work with precision and ease. There are savings in construction time too. Light in weight and accurately made, Lupton Master Aluminum Projected Windows can be installed quickly, with minimum labor . . . when you add all these client savings, you'll rate Lupton Windows a "best buy".

You'll find the windows you need, for almost any commission, described in Sweet's . . . or write direct for the '54 General Catalog.

MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue, Philadelphia 24, Pa.

LUPTON METAL WINDOWS

QUALITY APPROVED

Member of the Steel Window Institute and Aluminum Window Manufacturers' Association

WASHINGTON (*Cont. from p. 288*)

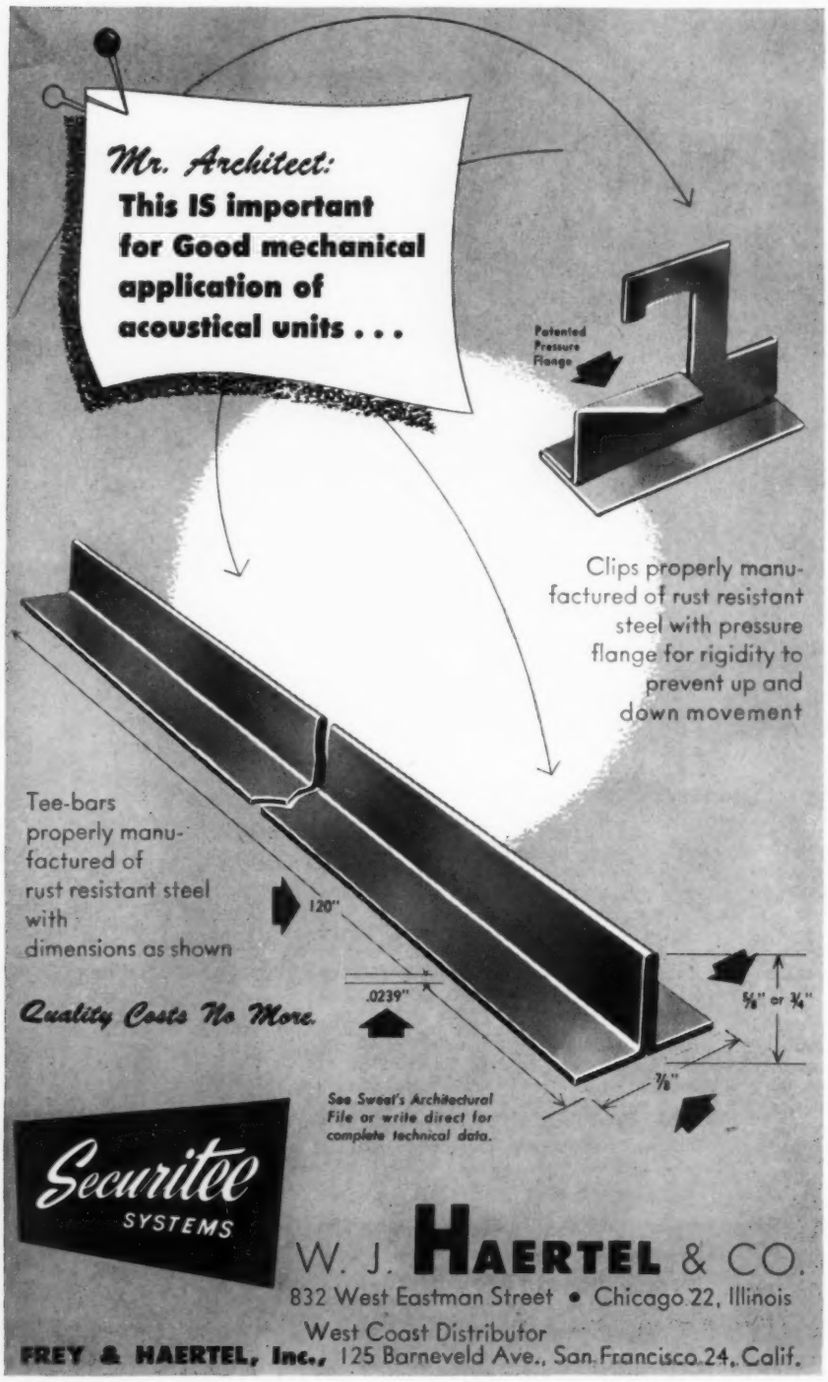
curity and hence make possible a longer period of repayment and a lower rate of interest than is feasible for unsecured personal loans."

The real estate mortgage loan was offered as the more practical answer to the question of financing major and expensive improvements.

Broad measures in any case were held to be preferable to specifically delineated moves that might carry with them an amount of Federal control. What the Chamber offered were financing aids that would extend market functions while leaving decisions up to the participants.

These aids, it was pointed out, would be applicable to the special task of rehabilitating blighted areas to the extent that the prospect of repayment was good.

"Whenever measures are introduced that tend to substitute government decisions for the ordinary market processes, the risk of slowing down or distorting the whole market operation is present, and hence, in the long run, of diminishing the total potential accomplishment," the Chamber letter observed.


Mr. Architect:
This IS important for Good mechanical application of acoustical units . . .
Patented Pressure Flange
Clips properly manufactured of rust resistant steel with pressure flange for rigidity to prevent up and down movement
Tee-bars properly manufactured of rust resistant steel with dimensions as shown
120"
.0239"
⅝" or ¾"
⅞"
Quality Costs No More
See Sweet's Architectural File or write direct for complete technical data.
Securitee SYSTEMS
W. J. HAERTEL & CO.
832 West Eastman Street • Chicago 22, Illinois
West Coast Distributor
FREY & HAERTEL, Inc., 125 Barneveld Ave., San Francisco 24, Calif.

CONGRESSIONAL EARS MAY HEAR MORE OF ARCHITECTS

There are some welcome, if scattered, symptoms that Congress is beginning to feel the need of more direct advice on architectural and engineering matters.

Senator Lyndon Johnson (D-Tex.) made a speech a few months ago (see page 24) in which he expressed his determination to encourage wider government use of private architect and engineer services.

And now Senator Styles Bridges (R-N. H.), chairman of the Senate Appropriations committee, has questioned the advisability of continuing a policy under which committees of Congress vote large sums of money for construction work without adequate engineering information. He ordered a report on the feasibility of the appropriations group using independent engineering services in the evaluation of Federal projects before the committee votes money.

The report was made for the Bridges committee by George Leary, of Wilton, Conn., chairman of the board of the Morris and Cummings Dredging Company of New York. The Senator was in consultation with Mr. Leary for several months prior to the convening of Congress January 6. He pointed out that Mr. Leary has had 35 years of engineering and construction experience and had served in an advisory capacity to the Chief of the Army Corps of Engineers on the problem of restoration of harbors in case of atomic attack.

Consultant May Be Named

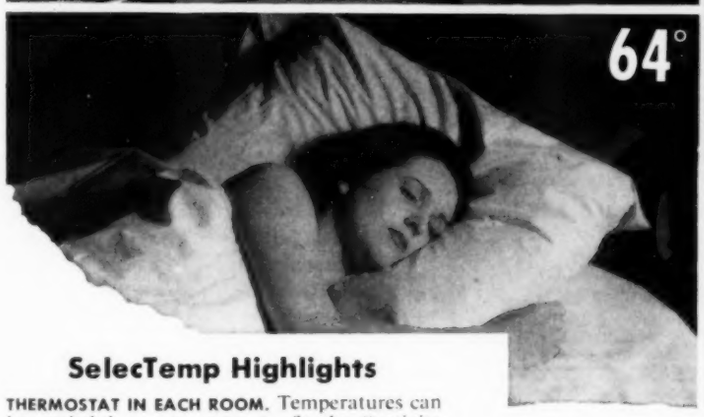
There was talk that the committee, after studying the Leary report, might decide to appoint an engineering consultant to furnish guidance on the planning phases of heavy construction programs.

Senator Bridges, in a statement issued last month, called attention to the fact that a substantial portion of the funds requested of the Congress are for construction, including housing, buildings of all kinds, air fields, flood control projects, reclamation projects, power projects, foreign aid programs and similar efforts. Frequently in the past the

(*Continued on page 296*)

At last... continuous modulated heating with individual room control . . . .

SelecTemp TRADE MARK HEATING



SelecTemp Highlights

THERMOSTAT IN EACH ROOM. Temperatures can be varied in every room to fit the "activity plan" and personal preference of the occupants.

MODULATED HEAT. Air circulation is continuous. Both temperature and volume of air is automatically modulated, as required to offset heat loss from room.

FILTERED, CIRCULATED AIR. Individual room air circulation prevents transmission of odors or bacteria from other rooms. Air is cleaned by a spun glass filter in each room unit. Filtered outside air can be introduced if desired.

BOILER LOCATION. Does not require centrally located heating plant. Boiler can be placed in any desired location, with proper distribution of heat to every room.

LOW POWER COST. No electricity required to operate circulating fans. Nonelectric thermostats.

LOW INITIAL COST. No other system can be so easily installed in either new or old construction. Small soft copper tubing (¼ inch I.D.) carries steam to individual room heater units. Return lines are ⅛ inch. Tremendous savings in installation costs.

LOW FUEL COST. Temperature easily reduced in unused rooms. Eliminates overheating.

AUTOMATICALLY BALANCED. No special adjustments of dampers, valves or orifices required to balance heating system. Each unit continuously regulates heat needed for each room. Automatically compensates for external heat sources such as fireplace or solar heat, without affecting temperatures of other rooms.

important announcement by Iron Fireman

Iron Fireman SelecTemp is a distinctively new method of comfort heating. It has been in actual use for three years and is giving outstanding performance in all types of buildings, from small homes to motels, apartment houses and office buildings.

Heating engineers have long recognized the need for accurately *modulated* heat (in contrast to the old "on-and-off" method of heat control), with individual room control. The modern trend toward extended floor plan and "picture" windows makes zone control essential for true heating comfort.

Until now, only those who could afford the very high cost of an elaborate heating plant and complex control system could enjoy a modulating flow of heat with control in *each room.*

Iron Fireman SelecTemp combines all of these desirable elements in such a simple and practical way that the ultimate in heating comfort can now be enjoyed in the smallest home or the largest residential, institutional or commercial building. Ideal for both new construction and modernization.

Write for descriptive booklet and specifications to Iron Fireman SelecTemp, 3160 W. 106th St., Cleveland 11, Ohio.

SelecTemp TRADE MARK

PRODUCT OF IRON FIREMAN

Send for full information

Copyright, 1953-I. F. Mfg. Co.

IRON FIREMAN MANUFACTURING CO.
3160 W. 106th Street, Cleveland 11, Ohio.
Please send literature on Iron Fireman SelecTemp heating.

Name_____

Address_____

City_____ State_____

WASHINGTON (*Cont. from p. 292*)

appropriations committee has been confronted with large requests for funds of this type — requests that carried with them little engineering data. In such instances the committee often acted without the benefit of independent engineering advice, he brought out.

The Senator also said that if the committee and the Congress are to do a real job in the further reduction of expenditures, a more thorough review of requests for funds of this nature must be made. As a chairman of the committee, he expressed his appreciation to Mr. Leary, who served without compensation in making the study.

NEW PLAN WOULD SHIFT ENGINEER CIVIL WORKS

The old question of transferring the Army Corps of Engineers' civil functions to the Interior Department was up again with publication of the Temple University survey on Federal reorganization.

While this study went to the White House some months ago, its contents were not made public until recently. Actually, the Johnson committee recommendations from Temple go farther than did the Hoover Commission findings on this point, and on several more.

The Temple report would establish within Interior a Water Development Service, with a chief in control, to encompass all Reclamation, Army Engineer civil functions, and flood control work of the Department of Agriculture.

To quote from the Temple survey: "The Bureau of Reclamation and the Army Corps of Engineers, historically different in function, met head-on competition when both began building multipurpose power dams. There cannot logically be two plans for one river. Yet the agencies have repeatedly worked at cross purposes in their haste to claim public funds for rival projects in the same areas of the West."

The report also advocates decentralizing the planning of water resources development through the establishment of state-Federal inter-agency regional committees operating under leadership of field representatives of the Division of Water Resources Programming.

WEATHER STRIPS FOR SLIDING DOORS

Open to All Outdoors

Yet . . . THESE SLIDING DOORS Are Fully WEATHER-PROTECTED BY "ACCURATE"

Open or close in seconds. Gliding quietly, smoothly, almost without effort, on "Accurate" Weather Strip Saddles and Sheaves. Today, Mr. and Mrs. America *want* sliding doors. This is evidenced by the plans of leading Architects from Coast to Coast who not only provide for sliding doors, but are careful to specify "Accurate" fittings for best performance.

ACCURATE

For doors and windows of all types, "Accurate" Metal Weather Strip is unsurpassed. Write for working drawings, or if you prefer

ASK FOR ILLUSTRATED FOLDER

ACCURATE METAL WEATHER STRIP CO., Inc.
215 EAST 26th STREET, NEW YORK 10, N. Y.

NEW GRANTS ANNOUNCED IN SCHOOL AID PROGRAM

Federal funds amounting to $3,659,804 have been reserved by the Office of Education and Welfare for school construction in Federally-affected defense areas, an amount which will make only a small dent in the need indicated by applications on hand. The Office of Education, around the first of the year, had received 612 applications for assistance under the new authorization, and these represented total requests for more than $130 million.

Federal funds certified for payment to local areas are restricted to the cost of providing only minimum facilities required for those children for whom such facilities are lacking. Reservation of funds does not constitute final approval of a local project.

The reservations just announced were the first to be made from funds authorized by the 83rd Congress last year under Public Law 246. Under Public Law 815, which 246 amended, a total of $341 million has been allotted for 1337 critically-needed school building projects

(*Continued on page 300*)

Now! Complete Flexibility

THE NEW, IMPROVED *Wheeler* DURATACH LINE

Complete Interchangeability

New design permits use of any Duratach Reflector with any Duratach Canopy Assembly, thus easily adaptable to any installation.

3 methods of hanging

to meet all lighting requirements . . . basic PENDANT installation, with simple conversions to SIDE OUTLET and OUTLET BOX.

5 Reflectors

each designed to do a specific lighting job

RLM Standard Bowl

RLM 30° Angle — RLM Deep Bowl

Shallow Dome — Elliptical Angle

Wheeler

REFLECTOR COMPANY

275 Congress Street, Boston 10, Mass.

Distributed Exclusively through Electrical Wholesalers

For complete information write for New

DURATACH BULLETIN

WASHINGTON (*Cont. from p. 296*)

in areas where defense and military activity have placed an abnormal load on present school facilities.

ADDENDA

• On the basis of the success of its first conference on a specific building material — porcelain enamel — the Building Research Advisory Board has decided to go ahead with other similar conferences. It is asking for suggestions from other segments of the building industry on similar conference projects. The new-style conference, held in November, examined the importance of porcelain enamel on metal from the architect's point of view. The complete report of the sessions will be published late this month or early in March.

• The U. S. Atomic Energy Commission has approved design and construction at Brookhaven National Laboratory of an ultra-high-energy particle accelerator for nuclear research. The new machine, an alternating gradient synchrotron, will be designed to produce beams of protons of energies ranging up to 25 billion electron volts. Cost will run $20 million.

• Gross national product in 1953 totaled about $368 billion, five per cent larger than in 1952, the Federal Reserve Board reported. This was a record both in dollar amount and physical volume. The increase reflected an upsurge in activity which began in the fall of 1952 and reached a high in the late spring of 1953. Expansion was based mainly on growth in private spending and was dominated by rising consumer expenditures.

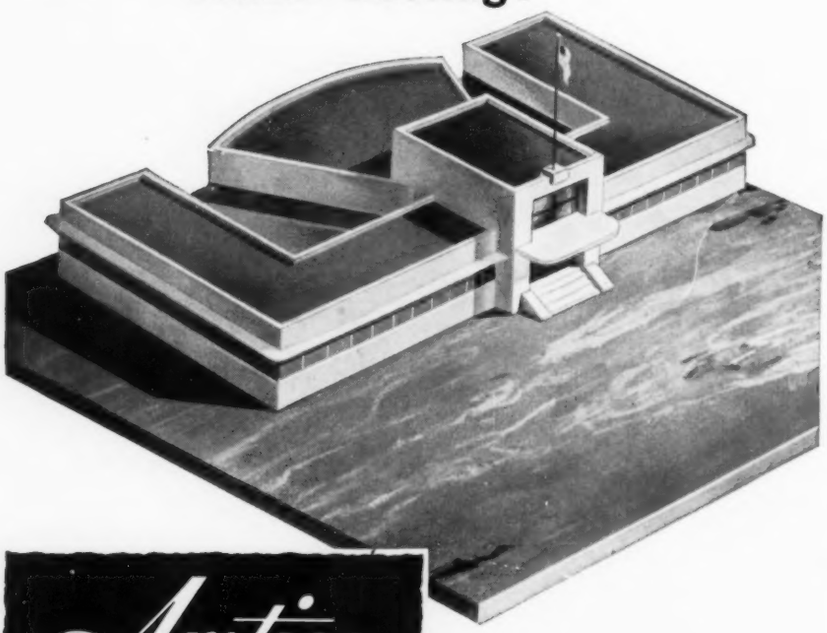
• Lumber producers turned out an estimated 10,244 million bd ft in the third quarter of 1953. This was some two per cent below third quarter 1952 production. On the other hand, estimates for the first three quarters of 1953, taken together, totaled 29,725 million bd ft, a production gain of four per cent over the comparative period of 1952. Average lumber prices as reflected in the wholesale price index dropped two per cent during the third quarter last year (1953), and retail lumber sales during the period failed to match those of the previous year. These facts were reported by the Lumber Survey Committee of the Department of Commerce. The group predicted about one million new non-farm homes would be started during 1954.

• The Federal Reserve Board has made its first major revision in the industrial production index since its introduction in the 1920's. Purposes were (1) to keep abreast of important changes in the structure of production, many of which have occurred since the last general revision in 1940 and wartime revisions in 1941 and 1943, and (2) to provide a more comprehensive and precise measure of industrial output than had been possible before by taking maximum advantage of numerous new data developed in recent years. In the process the number of component indexes has been increased from around 100 to 175. The index base has been updated, too.

(*More news on page 304*)

Perfect for that new school...

Amtico America's most beautiful rubber flooring!



Amtico RUBBER FLOORING

AMERICAN BILTRITE RUBBER COMPANY TRENTON 2, NEW JERSEY

In Canada—American Biltrite Rubber Co. (Canada) Ltd., Sherbrooke, Quebec

Affiliates... Biltrite Rubber Company, Chelsea 50, Mass. • American Tile & Rubber Co., Trenton 2, N. J. • Panther-Panco Rubber Co., Chelsea, Mass. • American Tile & Rubber Co. (Canada) Ltd., Sherbrooke, Quebec • Panther Rubber Co., Ltd., Sherbrooke, Quebec, Canada.

Also makers of Biltrite NURON for Shoe Soles, Luggage and Accessories—and Biltrite Rubber Heels

26 COLOR SAMPLE KIT... YOURS ON REQUEST

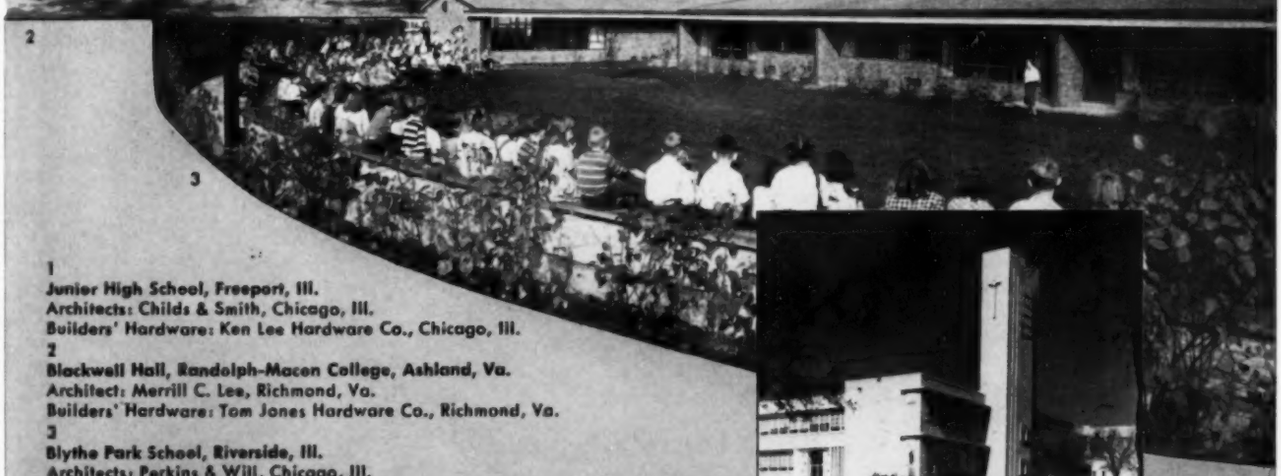
AMTICO, Dept. AR-19, Trenton 2, New Jersey
Gentlemen:
Please send me free box of 4" x 4" samples of Amtico Flooring in standard 1/8" gauge and all 26 stock colors—also illustrated literature.
NAME.....
FIRM.....
ADDRESS.....
CITY.....STATE.....
(Please attach coupon to your business card or letterhead)

1

modern schools and universities everywhere

choose G-J Door Devices

2



3

4

1
Junior High School, Freeport, Ill.
Architects: Childs & Smith, Chicago, Ill.
Builders' Hardware: Ken Lee Hardware Co., Chicago, Ill.
2
Blackwell Hall, Randolph-Macon College, Ashland, Va.
Architect: Merrill C. Lee, Richmond, Va.
Builders' Hardware: Tom Jones Hardware Co., Richmond, Va.
3
Blythe Park School, Riverside, Ill.
Architects: Perkins & Will, Chicago, Ill.
Builders' Hardware: Clark-Barlow Hardware Co., Chicago, Ill.
4
Incarnate Word High School, San Antonio, Texas
Architects: Julian & White, San Antonio, Texas
Builders' Hardware: Dumas Hardware Co., San Antonio, Texas

For over a quarter century Glynn-Johnson has manufactured door devices and specialties of original distinctive design. The quality built into each G-J product renders long, hard service for the protection and control of all types of doors in educational buildings.

Refer to G-J Catalog for complete line of door holders, bumpers, and specialties.

Floor Type

Push and Pull Action

DOOR HOLDERS AND BUMPERS

OVERHEAD DOOR HOLDER *Surface Type*

Floor Type

HERCULES DOOR HOLDER

DOOR BUMPER
Dome Type

Glynn-Johnson Corporation

Builders' Hardware Specialties for Over 25 Years

4422 N. Ravenswood Ave. Chicago 40, Illinois

G-J devices for all types of doors in modern school buildings:

Overhead Door Holders • Wall Type Stops and Bumpers
Transom Adjusters • Floor Type Holders and Bumpers

THE RECORD REPORTS

(*Continued from page 300*)

ON THE CALENDAR

Feb. 3–5: Ninth Annual Conference of the Plastics Division, Society of the Plastics Industry — Edgewater Beach Hotel, Chicago, Ill.

Feb. 11: Technical Development and Its Impact on Painting; fifth in a series of forums on "The Impact of Science and Materialism on the Arts Today" — Architectural League of New York, 115 E. 40th St., New York City.

Feb. 11–13: 1954 Convention, National School Boards Association — Chalfonte-Haddon Hall, Atlantic City, N. J.

Feb. 13–18: American Association of School Administrators, National Education Association — Atlantic City, N. J.

Feb. 21–27: National Engineers Week, sponsored by the National Society of Professional Engineers: theme, "Engineering, Builder of a Strong America."

Feb. 22–25: 50th annual convention, American Concrete Institute — Denver.

Feb. 23–Mar. 27: 1954 Gold Medal Exhibition of architecture, mural decoration, sculpture, design and craftsmanship in native industrial art, landscape architecture and engineering — Architectural League of New York, 115 E. 40th St., New York City.

Mar. 2–5: Department of Audio-Visual Instruction, National Education Association — Chicago.

Mar. 3–6: Spring meeting of the Board of Directors, American Institute of Architects — Washington, D. C.

Mar. 4–6: National Conference on Higher Education, Association for Higher Education, National Education Association — Chicago.

Mar. 4–Apr. 4: Gio Ponti and Gyorgy Kepes, an architecture and design exhibition — Institute of Contemporary Art, 138 Newbury St., Boston, Mass.

Mar. 8–11: National Electrical Manufacturers' Association — Edgewater Beach Hotel, Chicago.

Mar. 10–12: 40th Annual Convention, Michigan Society of Architects — Hotel Statler, Detroit.

Mar. 16–May 2: Street Scene: an exhibition of the work of Yale University students — Museum of Modern Art, 11 W. 53rd St., New York City.

Mar. 11: Technical Development and Its Impact on Sculpture; sixth in a series of forums on "The Impact of Science and Materialism on the Arts Today" — Architectural League of New York, 115 E. 40th St., New York City.

Mar. 15–19: Tenth Annual Conference and Exhibition, National Association of Corrosion Engineers — Kansas City.

Mar. 18–21: Annual meeting of the Committee on Art Education; theme, "Art Education and the Creative Process" — Museum of Modern Art, 11 W. 53rd St., New York City.

Mar. 22–26: First annual Southern Homes Show, sponsored by Textile Hall Corporation — Textile Hall, Greenville, S. C.

Apr. 1–6: Sixth Annual National Brickmason Apprentice Competition, sponsored by the Bricklayers, Masons and Plasterers International Union — Los Angeles.

Apr. 8: Future Directions and Changes:

(*Continued on page 308*)

1. Your RCA Sound Distributor

For expert, "no obligation," planning assistance, you'll find your RCA Sound Distributor is the man to know.

He can offer you advice on the latest in equipment, the newest in sound techniques. His experience covers a wide range of applications including schools, plants, hospitals, hotels, institutions, and stores.

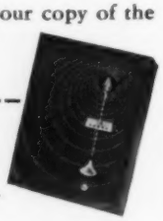
Call on him for the answer to any question involving sound.

2. New RCA Sound Products Catalog

Here, in easy-to-find form is the full line of RCA Sound Products.

In 17 pages, you'll find helpful data on RCA sound equipment from microphones to large sound system centers. Get this booklet for your files. It's a handy reference for any sound job you may tackle.

MAIL COUPON for your copy of the RCA Sound Products catalog now.



Sound Products, Dept. B-13, Building 15-1
Radio Corporation of America, Camden, N. J.

☐ Please have an RCA Distributor Sound Specialist call on me.
☐ Send me the new free RCA Sound Products catalog.

Name_____ Title_____

Company_____

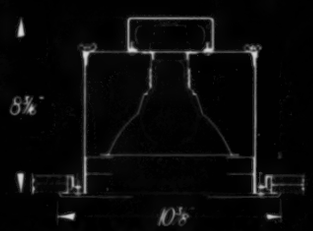
Address_____

City_____ Zone_____ State_____

RCA **RADIO CORPORATION of AMERICA**
SOUND PRODUCTS CAMDEN, N.J.

SPOT
LIGHTING
WITH
CURTIS

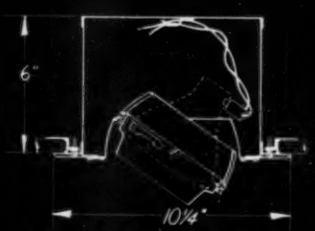
"VARI-SPOT"



CATALOG No. 2246

Curtis "Vari-Spot" is a shallow recessed downlight, utilizing one 100-watt inside frosted incandescent lamp. It is designed for use in residential and commercial interiors. An adjustable Alzak aluminum reflector permits the diameter of the circle of light to be controlled and changed as desired. Decorative holes in the finishing ring provide an attractive light pattern at the ceiling.

"PUNCHY"

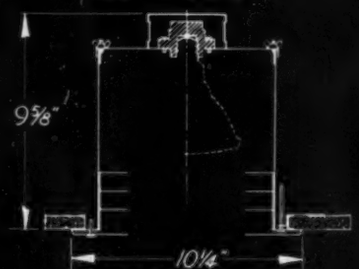


CATALOG No. 2240

Curtis "Punchy", is a shallow recessed adjustable downlight utilizing one PAR-38, Side Prong 150-watt projector spot or flood lamp. It is designed to provide punch lighting for counters, displays, show windows and other areas in store interiors.

"Punchy" features an exclusive aluminum gimbal ring which permits adjustment of the lamp to any angle 0° to 35° from the vertical, and 0° to 360° horizontal.

"SPOTTY"



CATALOG No. 2244

Curtis "Spotty" is a shallow recessed fixed downlight utilizing either one PAR-38 or R-40 screw base 150-watt spot or flood lamp. It has wide application for accent, supplementary and general lighting.

Three horizontal steel baffles, an integral part of each unit, are designed and positioned to provide an exceptionally low-brightness incandescent unit at normal viewing angles.

WRITE FOR FREE DESCRIPTIVE LITERATURE

Curtis Lighting, Inc., 6135 W. 65th Street, Chicago 38, Illinois

THE RECORD REPORTS

(*Continued from page 304*)

What Is the Expression of Our Times?; last in a series of forums on "The Impact of Science and Materialism on the Arts Today" — Architectural League of New York, 115 E. 40th St., New York.

Apr. 15–May 15: Design in Scandinavia exhibition — Brooklyn Museum, Eastern Pkwy., Brooklyn, N. Y.

Apr. 26–28: Annual meeting, United States Chamber of Commerce — Washington, D. C.

OFFICE NOTES

Offices Opened

• Herman G. Gold & Associates, an architectural firm, have announced the opening of their new office at 8504 E. Nine Mile Rd., Van Dyke, Mich.

• The Pepper Association, Architects, have opened new offices recently at 1616 Locust St., Philadelphia 3, Pa. Members of the firm are F. F. Schumann, A.I.A., Theodore S. Miller, A.I.A., Heyward M. Pepper, A.I.A., and Frederick W. Crown, Architect.

• The firm of Thomas Lyon White and F. Kirk Helm, Associated Architects, announce the opening of a new office. Their address is 484 Main St., Geneva, N. Y.

New Firms, Firm Changes

• The partnership of William Allen and W. George Lutzi, Architects, has been dissolved. Mr. Allen's address is now Suite 200, 6112 Wilshire Blvd., Los Angeles 48, Calif., while Mr. Lutzi's is Suite 203 at the same address.

• Clinton P. Atkins and Joseph M. Barrow have announced the formation of a firm for the practice of architecture. The new firm, to be known as Atkins, Barrow & Associates, will be located at 102 E. Main St., Urbana, Ill.

• John Byron Hackler, Architect, has announced the closing of his Pekin, Ill., offices. Any correspondence to Mr. Hackler should be addressed to Foley, Hackler, Thompson, Lee, Architects, 317 S. Jefferson St., Peoria, Ill.

• The new firm of Hart & Weiss, Architects, has been formed by Philmore J. Hart and Jerry F. Weiss. The firm's address is 12728 Woodland Ave., Cleveland 20, Ohio.

• Merrill J. Martin, Robert F. Gebhardt and Bernard Di Paola have announced the formation of their new firm for the practice of architecture. The firm, which will be located at 205 Broad Ave., Fairview, N. J., will be known as Martin, Gebhardt and Di Paola.

• The formation of the partnership of Martin, Stewart & Noble has been announced by its members, Sydney E. Martin, Harry G. Stewart and Robert W. Noble. Associates in the firm are Robert Allan Class and Joseph B. Townsend. Offices are located at 1101 Architects Building, 17th and Sansom Sts., Philadelphia 3, Pa.

• The new firm of A. H. McCann and Associates, Architects and Engineers, has offices at 410 Howes Building, Clin-

(*Continued on page 310*)

ROMANY

SPACE-SET TILE

It's New! It's Better!

4¼" x 4¼" SIZE ONLY

A noteworthy advance in tile design, with the following exclusive advantages:

POSITIVE SPACING — Each spacer working independently provides for full width of the joint. Automatically allows for proper spacing between trim and flat tile.

FLEXIBILITY — Four spacers on each side permit easier setting of fractional cut tile, etc. The spacers are arranged so that the tiles may be set straight or broken joint.

DESIGN — Spacers are designed to withstand rough treatment, and so that maximum grout can be forced into the joint. Space-Set tiles can be set with a string if a wider joint is desired.

All of Romany's outstanding features have been retained, including: Strong Buff Body, Size and Shade Control, Beautiful Colors, Enduring Glazes, Cushion Edge, Low Absorption, Versatility.

Correspondence Invited

UNITED STATES QUARRY TILE CO

Member: Tile Council of America and Producers' Council, Inc

217-H FOURTH ST., N.E., CANTON 2, OHIO

for the specification consider these features

ROMANY IS:

FIRE PROOF

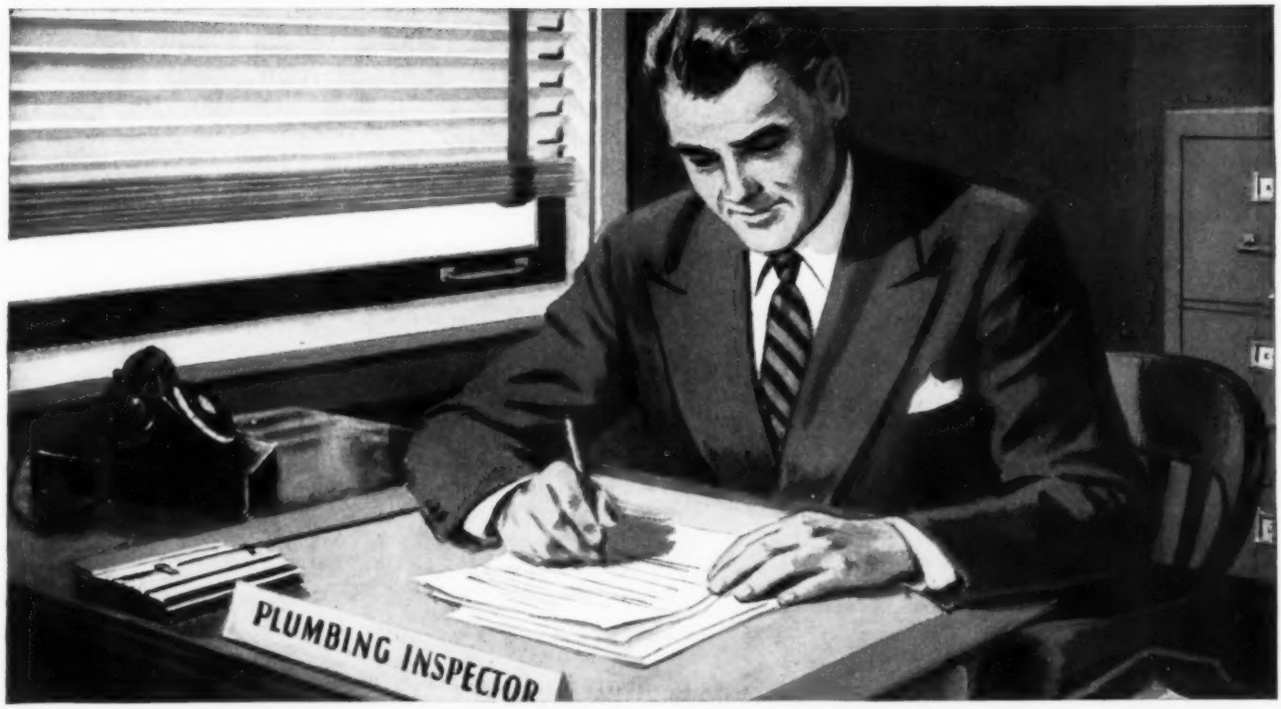
WEAR PROOF

FADE PROOF

SCRATCH PROOF

ACID PROOF

And is available in more than 30 attractive colors.



244 of 261 Plumbing Inspectors
say their choice of materials is
CAST IRON SOIL PIPE

On November 4, 1953, the Institute wrote to 688 plumbing inspectors in cities scattered all over the U. S. These officers were asked about their preference in materials for house sewers, running from house to street, or from house to septic tank.

Of the 261 inspectors who replied, 244 said that for mechanical strength, root-proofness and permanence, they prefer **Cast Iron Soil Pipe and Fittings.** That's the opinion of men whose job is to safeguard public health.

Every architect knows sound reasons for this overwhelming preference. Not only does cast iron soil pipe resist the damage of settling, moisture and root penetration, but its lead-caulked joints and its fittings take the rigors of rodding without damage. Many architects feel that their responsibility to clients includes the structure and all its connections, straight through to the street. That's why so many of them specify permanent cast iron soil pipe and fittings.

USE *PERMANENT* CAST IRON SOIL PIPE AND FITTINGS

How the sound movie, "PERMANENT INVESTMENT" can be of help to the architect

Today, more than ever before, architects are being consulted about materials and methods that affect the home as a whole. Many clients seek the architect's advice on the plumbing drainage system, not merely in the house itself, but including the sewer line from house to street, or house to septic tank. The Institute will be glad to arrange for a free showing of "Permanent Investment" to help any architect to demonstrate the importance of quality materials in plumbing drainage.

CAST IRON SOIL PIPE INSTITUTE
Dept. AR-2, 1627 K Street, N.W., Washington 6, D. C.

☐ **Send educational folder, "Plumbing Drainage."**

☐ **Our local ..... Club wants to see your movie, "Permanent Investment." Tell us how to arrange for free showing.**

Name_____

Address_____

City_____ Zone_____ State_____

THE RECORD REPORTS

(*Continued from page 308*)

ton, Iowa. The firm will succeed to the business of Morell and McCann, Architects.

• Walter R. Nexsen, A.I.A., has been admitted to membership in the firm known now as Clark, Buhr & Nexsen, it was announced by Pendleton Clark, F.A.I.A., and Victor W. Buhr, C.E. The firm's address is 208–210 Midtown Building, Norfolk 5, Va.

• Vernon F. Tinsley, Burdette Higgins and Clyde W. Lighter have announced that R. Wayne Lyon has been made a partner in the firm. Their practice will now be handled under the firm name of Tinsley, Higgins, Lighter & Lyon, Architects, and is located in the Liberty Building, Des Moines, Iowa. Mr. Tinsley, it was also announced, will remain in the firm only as consultant.

IN THE ENTRANCES TO

MERCY HOSPITAL
New Orleans, La.

Ellison the BALANCED DOOR

The Door that lets TRAFFIC through QUICKLY

Ellison the BALANCED DOOR

ELLISON BRONZE CO.
Jamestown, New York
representatives in 78 principal cities in the United States and Canada

New Addresses

Foss-Jansma, Inc., 11109 W. Blue Mound Rd.,Wauwatosa, Wis.

Hammel and Green, Architects, 186 Fairview Ave. North, St. Paul, Minn.

Myrl Hanes Associates, Architects, 201 N. W. Tenth Ave., Gainesville, Fla.

Donald H. Honn, Architect, 216 W. Second St., Tulsa, Okla.

Abner C. Hopkins, A.I.A., 38 W. Monroe St., Jacksonville 2, Fla.

Raymond K. Knox, Architect, 913 S. Sixth St., Springfield, Ill.

Sidney W. Little, A.I.A., 134 Regal Court, Eugene, Ore.

J. Kenneth Myers, Architect, 3915 Saw Mill Run Blvd., Pittsburgh 27, Pa.

Reddemann-Knudson, Architects, 13375 Watertown Plank Rd., Elm Grove, Wis.

L. Morgan Yost, and D. Coder Taylor, 500 Green Bay Rd., Kenilworth, Ill.

EXHIBITIONS

A.F.A. Traveling Exhibits

The American Federation of Arts has announced the following titles of architectural exhibits available for circulation: *Shopping Centers of Tomorrow*, *A.I.A. National Honor Awards*, *Contemporary Swiss Architecture*, *Recent Architecture in Western Germany*, *Bridges Are Beautiful*, and *Designs for Fountains*. Information can be obtained from Thomas M. Messer, Assistant Director in Charge of Exhibitions, A.F.A., 1083 Fifth Ave., New York, N. Y.

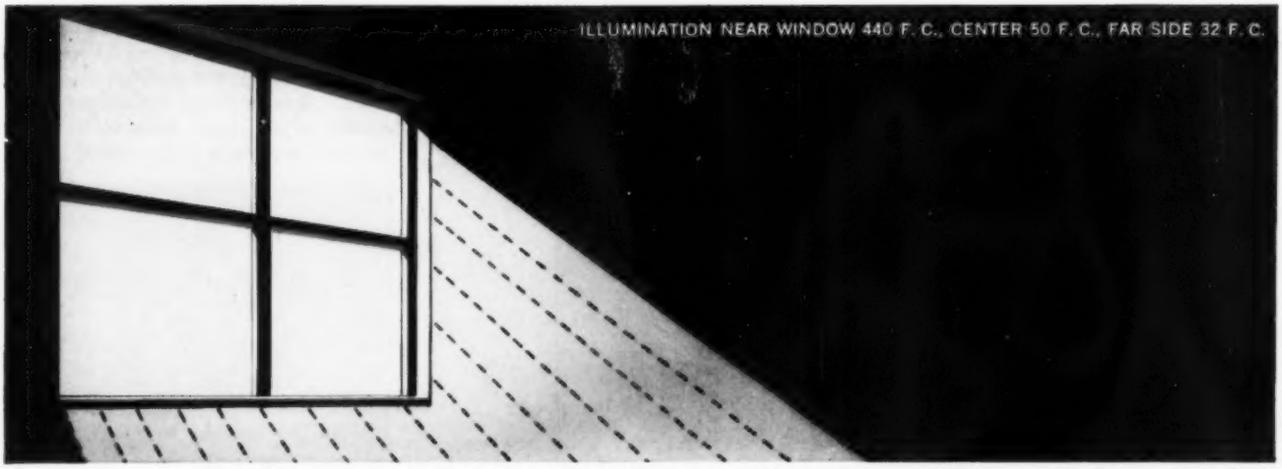
New Library Exhibit Tours

Under the sponsorship of the Smithsonian Institution's Traveling Exhibition Service, an exhibit, "New Libraries," is currently touring the country. The exhibit features photographic panels of fifteen recent public and university libraries, and was prepared by the American Institute of Architects.

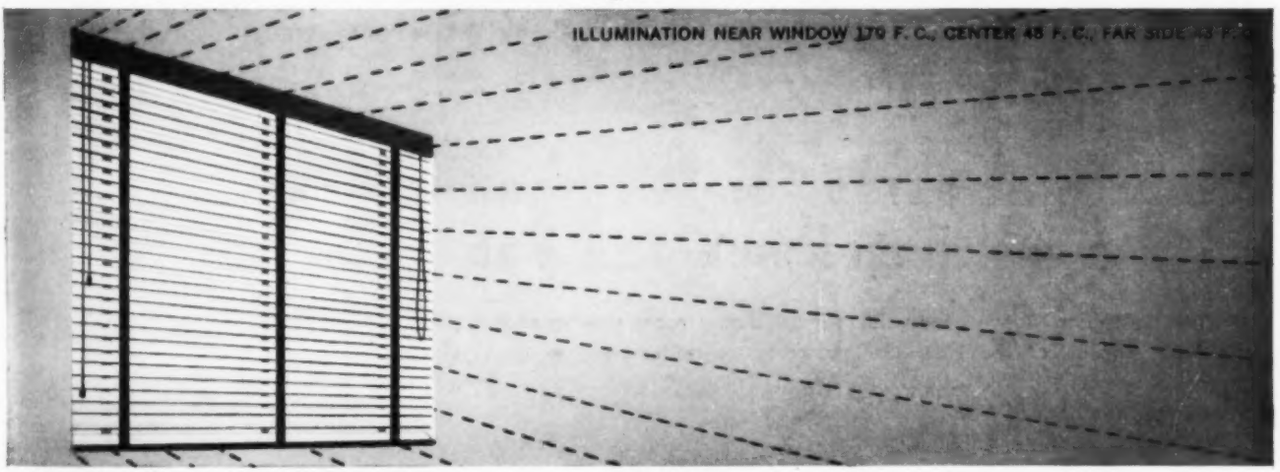
The exhibit is on view in Chattanooga, Tenn., Jan. 24–Feb. 14, 1954; Williamstown, Mass., April 4–25, 1954; and Norfolk, Va., May 9–30, 1954. Information is available from Mrs. John A. Pope, Chief, Traveling Exhibition Service, Smithsonian Institution, National Collection of Fine Arts, Washington 25, D. C.

(*More news on page 312*)

you get **34.4%** more light with all-*Flexalum*® venetian blinds



bare window wastes light…leaves far side dark



Flexalum blind spreads light to far side of room

An exhaustive study by the Faber Birren Company* shows: A bare window gives extreme glare on one side of the room, insufficient light on the other. The FLEXALUM Blind, by reflection, *spreads* the high-intensity sunlight at the window throughout the room—giving more illumination with less glare. The brightness ratio, which was 14 to 1 with the bare window, is now reduced to a comfortable 4 to 1. **Copies of this study available on request. Write for local sources and free file of venetian blinds information—AIA File #35-P-3.*

Only all-FLEXALUM Blinds give these maintenance and durability advantages:

Wipe-Clean Plastic Tapes and Cords

Cut cleaning time from hours to minutes. A damp cloth wipes away the stubbornest stains. Won't fade, shrink, or mildew.

Snap-Back Aluminum Slats

Spring-tempered to snap back ruler-straight even when bent to a 90° angle. Baked-on finish won't rust, chip, crack, or change color.

Insist on this Mark!

The FLEXALUM "visible" invisible" trade-mark guarantees a top quality blind. For satisfied clients specify all-FLEXALUM blinds.

Hunter Douglas Corp., 150 Broadway, New York 38.

THE RECORD REPORTS (*Continued from page 310*)

CLEVELAND A.I.A. PICKS NOTEWORTHY BUILDINGS

The Cleveland Chapter of the American Institute of Architects has turned publisher and their first venture into the field, a brochure, "Cleveland Builds, a Guide to Noteworthy Architecture in the Cleveland Area," ought to pay some excellent public relations dividends.

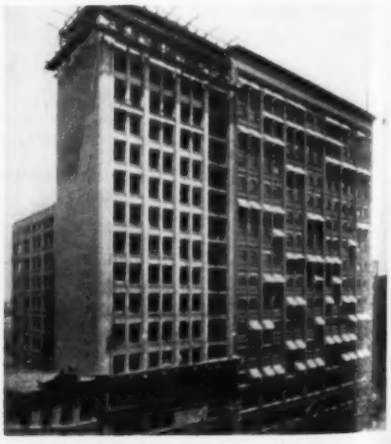
The idea first occurred to Robert C. Gaede, a Chapter member, who had been helped by such booklets when he visited the Scandinavian countries. The first step was a poll of all the members, and the 11 top vote-pullers were chosen.

The fold-out pamphlet comprises a map of Cleveland, marked with locations of the buildings, and photographs of the buildings with descriptive data. Research and design for the folder were done by the student chapter of the A.I.A. at Western Reserve College.

Above: No. 1, U. S. Coast Guard Station, 1940; J. Milton Dyer, architect. The design "was worked out to give the impression of wind and wave resistance." Below: No. 2, Lakeview Terrace, 1937; Joseph L. Weinberg, William H. Conrad and Wallace G. Teare, architects. A low-rental housing development project was chosen for its "honest and imaginative use of . . . materials"

Above: No. 3, Bird Building, 1950; J. Byers Hays, architect. This is the first building of a projected zoo for Cleveland; terra cotta plaques are by sculptor Viktor Schreckengost. Below: No. 4, Rockefeller Building, 1903; Knox and Elliot, architects. It was noted for "severe exposition of the steel frame . . . creating a tall machinery of lines and glass owing nothing to past styles"

(*Continued on page 314*)



W. K. Kellogg Center
Continuing Education Building
Michigan State College • Lansing

source of pride for Michigan State, all hotel men and Van

- The illustration above shows the regular dining room serving section of the main kitchen of the New Continuing Education Building at Michigan State College . . . a part of the new W. K. Kellogg Center. The equipment here is only a part of Van's contribution.
- Here and throughout Architect Lewis J. Sarvis of Battle Creek allotted space as Van engineering indicated was required by the unusual problem of serving up to 150 house guests in the hotel and up to 1200 in the banquet room and private dining rooms for the large groups who will come for refresher training.
- Such customers of distinction throughout Van's Century of Service have caused many architects to rely on Van for food Service equipment counsel.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

Branches in Principal Cities

429 CULVERT STREET **CINCINNATI 2, OHIO**

Ing-Rich

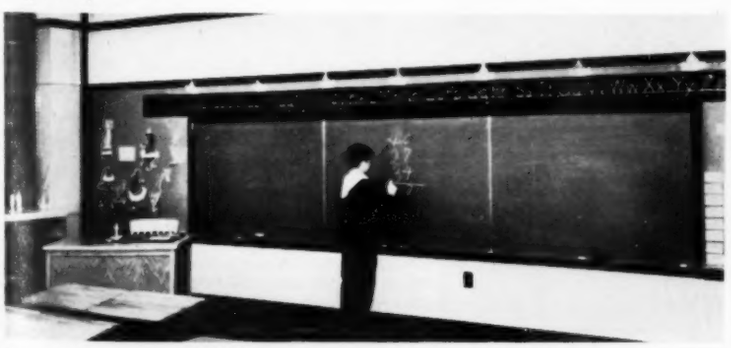
PORCEL PANELS

AND CHALKBOARDS

for School Buildings

PROVIDE BEAUTY and DURABILITY with ECONOMY

SCUFF-PROOF, LOW MAINTENANCE corridor walls in this school are achieved through the use of Ing-Rich Porcel Panels in various colors. Porcel Panel walls in washrooms, classrooms, closets and laboratories are easy to keep clean, and resist wear. St. John's Parochial School, Monaca, Pa. Architect—Byron J. McCandless, Ellwood City, Pennsylvania.



ING-RICH PORCELAIN ENAMEL STEEL CHALKBOARDS are made in a restful shade of green and in other accepted standard colors. Extensive research has developed a special surface texture that is ideal for writing, easy to clean, and durable. Sold and erected by Gotham Chalkboard and Trim Company, 246 E. 125th St., New York 35, New York.

Member, Architectural Division, Porcelain Enamel Institute

INGRAM-RICHARDSON MANUFACTURING CO.

Beaver Falls, Pennsylvania • Established 1901

Hard, smooth Porcel Panel walls for schoolrooms, corridors and other interior surfaces defy the destructive effects of normal service, retaining their color and texture for many years. Made of glass-like porcelain enamel fused to steel, Ing-Rich Porcel Panels resist scratches, stains and wear; they do not fade or discolor; they eliminate costly repainting, and the only maintenance required is occasional washing with soap and water. Porcel Panels are fireproof, light in weight and easily installed.

EXTERIOR WALLS AND SPANDRELS

For curtain wall construction, Ing-Rich offers a number of prefabricated "sandwich" panel designs in which porcelain enamel is used in conjunction with various insulating materials. These permit an economical, durable, practical construction, versatile enough for any type of building design, and provide a permanent finish in a wide variety of colors and textures.

* * *

For more than fifty years, Ing-Rich has manufactured porcelain enamel products and is a leader in the specialized field of architectural porcelain enamel. Ing-Rich products conform to the exacting standards of the Porcelain Enamel Institute. Representative applications are illustrated here.

SEND for free booklet describing Ing-Rich Porcel Panels and illustrating with architectural detail drawings various types of applications.

SEE OUR CATALOG IN SWEET'S

INGRAM-RICHARDSON MFG. COMPANY

Beaver Falls, Pennsylvania

Please send copy of your bulletin 1053 to:

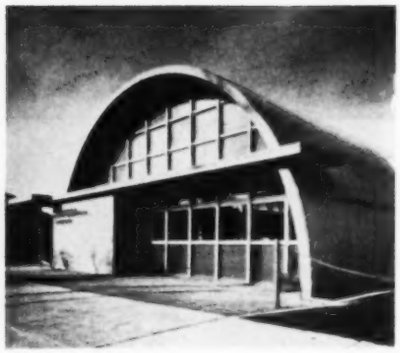
NAME _____

FIRM _____

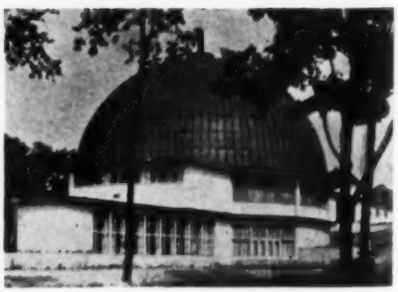
ADDRESS _____

 (*Continued from page 312*)

Left: No. 5, Dunham Tavern Museum, 1832; Jane and Rufus Dunham, builders. Above: No. 6, Cleveland Museum of Art, 1916; Hubbell and Benes, architects. Chapter members noted the composition of pool, garden and building



Above: No. 7, National City Bank, University Circle Branch, 1947; Garfield, Harris, Robinson and Schafer, architects. A temporary structure, this was chosen for its "simple dramatic form." Below: No. 8, Halle Bros. Co. Department Store, Shaker Square Branch, 1948; Robert A. Little, architect. Architects considered both its plan and its appearance in a traditional-style shopping center as worthy of note

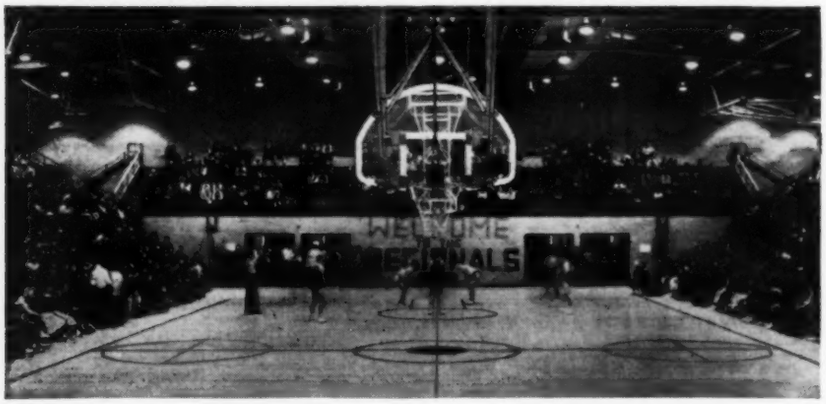


Above: No. 9, Park Synagogue, 1950; Eric Mendelsohn, architect; Charles C. Colman, supervising architect. This was commended for its attempt "to express what is beautiful and eternal in Judaism." Below: No. 10, Pepper Ridge Community, 1951; Robert A. Little and Associates, architects. This is a small suburban development of strictly contemporary design. Not shown: No. 11, Shopping Center, 1945; Ernst Payer, architect

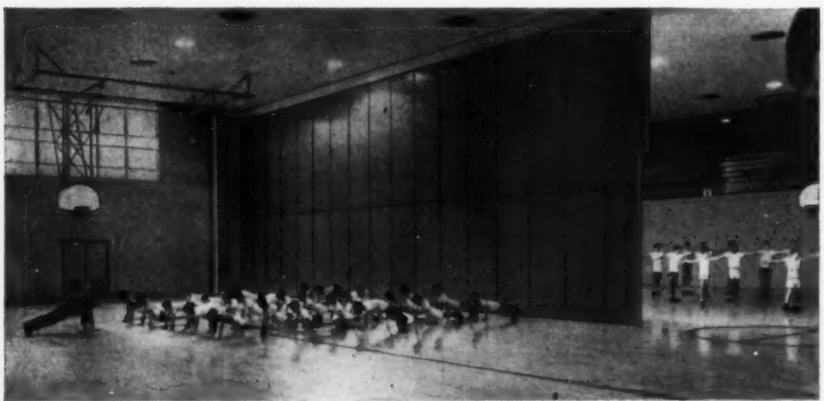
(*More news on page 316*)

HORN GYMS WORK

NIGHT AND DAY



NIGHT brings exhibition games, the paying crowd . . . Horn Folding Gym Seats extend, partitions fold back, to make ample room for the crowd and the game. Full chair height of seats, generous leg room, assures spectators greater comfort, enjoyment. *Safe*—each row automatically locks as it opens.



DAY brings practice, classes . . . Horn electrically operated partitions easily extend to divide floor space for multiple gym use. Horn seats fold against the wall to provide a *smooth* sloping surface, real protection for player's *vital zone!*

Horn

SCHOOL EQUIPMENT DIVISION OF

Your local Horn representative helps you plan for maximum gym use. Write today for details on Horn folding gym seats, partitions, stages!

see
BRUNSWICK
classroom furniture and
HORN
school equipment
at the
AASA Convention
ATLANTIC CITY
February 13–19
Booth 1211–1219

THE BRUNSWICK-BALKE-COLLENDER COMPANY • 623 SOUTH WABASH AVENUE, CHICAGO 5, ILLINOIS

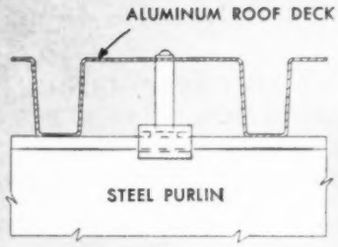
Why ALUMINUM for Roof Deck...

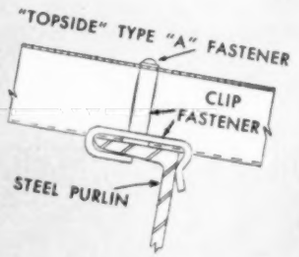
The architect who specifies a Roof Deck has in mind, first, the flat supporting basis for a built-up roof—with its further detail of vapor barrier, insulating board and successive protective layers. So far as concerns the built-up roof itself, the requirements of the deck material are primarily structural.

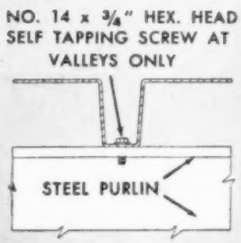
Equally a part of the Deck, however—and a source of endless heavy expense in many large buildings—is its *undersurface*. Where this surface is to be exposed, and where the material requires protective coating—as in the case of steel, wood or concrete—periodic painting, often with elaborate scaffolding, is expensive and impedes normal use of the area.

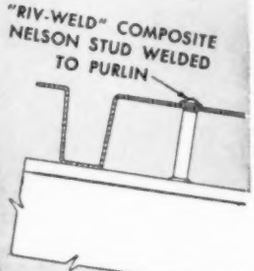
Aluminum, fabricated in a design meeting all structural requirements, is a practical answer to this problem. It is rustproof, requiring no painting for moisture protection even in highly humid atmospheres. It is corrosion-resistant, suitable for industrial applications where atmospheric fumes would attack other materials. The aluminum undersurface is also radiant heat reflective—which, under many conditions, will reduce the cost of year-round temperature control. Its light reflectivity helps in illumination of the area, and the material presents a modern appearance.

In addition, the lighter weight of Aluminum Roof Deck speeds installation, saving labor cost.









ReynoDeck...

Reynolds *Lifetime* Aluminum Roof Deck. Aluminum .032" and .036" thick (U. S. Std. 22 and 21 gauge), formed into panels having six stiffener ribs 1.75" deep and 4.8" center to center. Rib sides sloped for nesting. Flat surface embossed for added rigidity. 25" wide (coverage 24"), lengths up to 14'6". Write for full Data Book including load-span and insulation tables. Reynolds Metals Company, Building Products Division, 2015 S. Ninth St., Louisville 1, Ky.

SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.

REYNOLDS ALUMINUM

BUILDING PRODUCTS

THE RECORD REPORTS

(*Continued from page 314*)

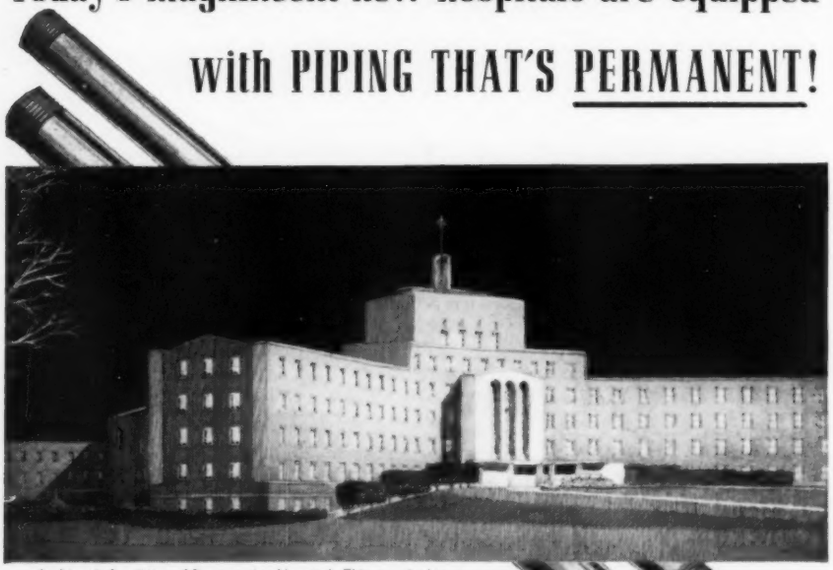
GOOD (AND CHEAP) DESIGN IN EXHIBITION AT PRATT

The "Penny to Dollar" exhibit recently on view at Pratt Institute in Brooklyn went to prove that good design can be economical. The articles on exhibit, none of which was priced at more than a dollar and many considerably under that, were selected and mounted by second-year students in interior design, who chose the articles on trips to various New York shops. Selections included toys and Christmas ornaments as well as ceramics, glassware, tableware, tools and kitchen utensils. This was the second year that Pratt students had held such an exhibition under the auspices of the Department of Interior Design, headed by Miss Eleanor Pepper.

Articles were displayed against a white wall. Wood shelves, supported on black wood frames, were painted black, yellow and orange.

(*More news on page 330*)

Today's magnificent new hospitals are equipped with PIPING THAT'S PERMANENT!



Architect's Rendition of Resurrection Hospital, Chicago. Architects: Schmidt-Garden & Erikson. Plumbing Contractor: Fettes, Love & Sieben. Clow (threaded) Cast Iron Pipe for all downspouts, wastes and vents.

Clow (threaded) Cast Iron Pipe adds permanence to all buildings

The newly-constructed hospitals so desperately needed today will play a vital part in the good health of Americans for decades to come.

These important buildings *must* be built for permanence. That's why more and more architects and contractors choose Clow (threaded) Cast Iron Pipe for the downspout, vent, and waste lines in today's hospitals. They know that because of its great resistance to corrosion, Clow piping will last the life of the building. They prefer Clow pipe, too, because of its low installation cost.

Write today for complete, factual information on Clow (threaded) Cast Iron Pipe.

A COMPLETE LINE FOR ALL PIPING NEEDS

Clow (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8 and 10" sizes in 18' random lengths. Also available with integral calking hub on one end (other end plain) in 18' random lengths in 4, 6 and 8" sizes.

Clow Cast Iron Pipe can be . . .

on the job, with ordinary tools of the piping trade.

JAMES B. CLOW & SONS

201-299 North Talman Avenue • Chicago 80, Illinois

WHOLESALERS OF PLUMBING AND HEATING SUPPLIES

Publishers of the Clow Bulletin

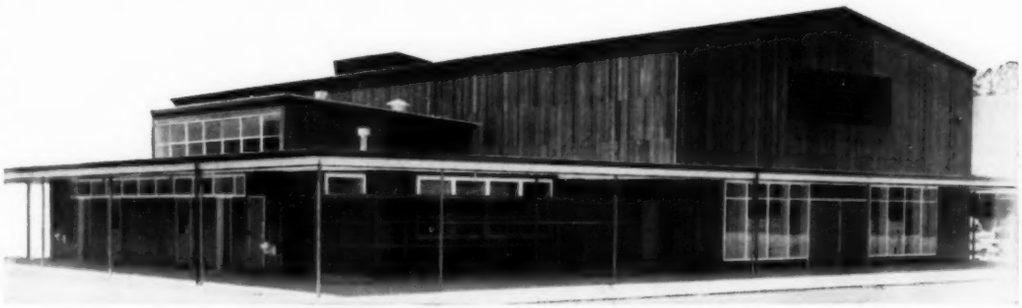
BARBER COLMAN

ELECTRIC

Control Center

Modern electric control system provides low-cost solutions to heating and ventilating problems at TIERRA LINDA SCHOOL

Location: San Carlos, California. *Architect:* John Lyon Reid. *Consulting Engineer:* Dwight Coddington. *Heating Contractor:* Schlegel Plumbing Contractors, Inc.



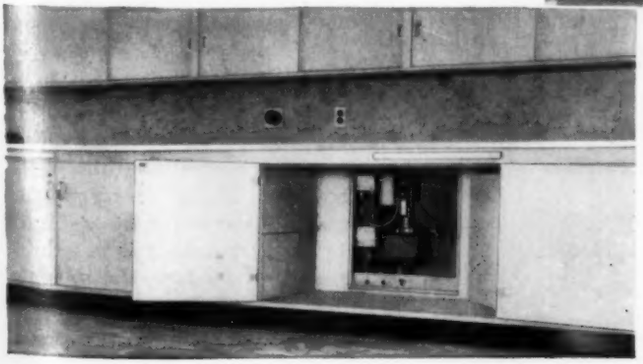
As modern as the building design itself are the electric temperature control and air distribution systems installed in Tierra Linda Grade School. Atmospheric conditions are provided which contribute to the alertness of students and faculty, yet require minimum attention and expense. Each area having specialized requirements is individually engineered.

Four major benefits resulted from Barber-Colman's "Control Center" technique in this excellent example of contemporary grade school housing: (1) automatic electrical operation, requiring minimum attention, yet permitting optional manual control; (2) lowered fuel and electric costs; (3) low-cost installation in widely separated buildings; (4) satisfactory operation with low maintenance.

Unitary control systems handle radiant panel heating, unit heaters, convectors, and ventilation in the eighteen classrooms, locker and shower rooms, music room, library, materials center, toilets, closets, general-purpose room, and administrative offices. Systems can be checked or revised at the "Control Center."

Get the complete story on modern control methods, including the B-C "Control Center" technique by phoning nearby Field Office (consult telephone directory), or writing us.

Big cost-saving factor is B-C "Control Center" in boiler room. Here, at one central junction point, are prewired accessories and numbered terminal strips for connecting all electrical components of each unitary control system.



In multi-purpose auditorium (above), Barber-Colman Uni-Flo Diffusers and Return Grilles provide healthful, draft-free air distribution. Space is saved (left) by installing electrical components in partitions behind cabinets. Controls require no floor space, yet are readily accessible. Temperature of each room is controlled independently within close limits for comfort of occupants. Installation in boiler room included proportioning-type, adjustable-ratio, outdoor reset controls actuating motor-operated valves for supplying hot water to radiant heating system.

BARBER-COLMAN COMPANY, ROCKFORD, ILL., U. S. A.

Dept. B, 1304 Rock St. Field offices in principal cities.

Air Distribution Products • Automatic Controls • Industrial Instruments
Aircraft Controls • Small Motors • OVERdoors and Operators • Molded Products • Metal Cutting Tools • Machine Tools • Textile Machinery

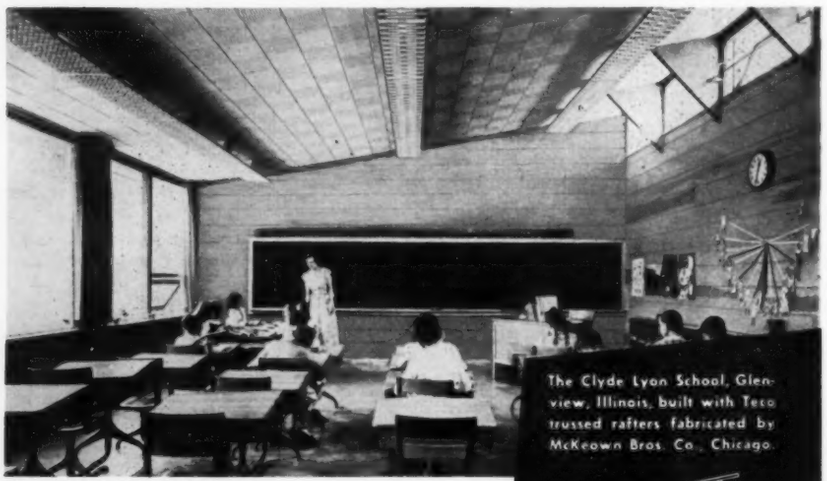
(*Continued from page 9*)

learned about the problem of selection. Can you make an architect out of everyone who wants to be an architect? There are different views, of course. But here I found one point of view that has been strongly advocated, and I personally liked it. The Dean explained to me that it is not difficult to decide whether a young student is gifted enough to become a good architect. He relies on his teachers to select the better students and to note the weak ones, who are dropped. He accepts the possibility of making some mistakes, but it does pay. From the national point of view, as well as from the professional, it is much better to make a *few* errors in putting the brakes on the study of some who appear to be not gifted students, than to allow *many* to go into the learning of architecture and later become second-rate professionals. (It is never evident whether a weak student is not gifted and will remain so, but it is always clear that there are fewer chances to produce bad architects by educating only those who seem to possess the necessary talents.)

I HAVE NOT YET MENTIONED the subject of "Basic Design," which I first encountered at the A.A. School of Architecture in London; afterwards I met it in Boston, Philadelphia, Raleigh, and many other places. "Basic Design" is a new item on the list of subjects taught in these schools; it was introduced only a few years ago. Gropius started with new ideas in Bauhaus; later Moholy-Nagy transplanted them to the Illinois Institute of Design, and many other schools followed suit. To explain "Basic Design" in detail would carry me far afield from the theme of my talk. Still, I want to point out at least the importance of this discipline. In "Basic Design" a student is given a chance to feel whether he really can be a creator on his own. He acquires a sense of creation and he begins to believe that it is not necessary for him to copy in order to create, as he is given the basic tools for the creation of new forms and ideas. This subject helps also to reveal whether the student has talent for architecture.

I was especially impressed with "Basic Design" in Raleigh, and later in Los Angeles and Eugene, where it was not only visual design of color, of proportion, of the length, surface and volume, of texture and design, of four dimensional sculpture — called "mobiles" — but it was also a basic approach to the design of structural problems. Theories like those of Buckminster Fuller; the work of Eduardo Catalano — professor at Raleigh; the structures and materials "laboratory" of James Fitzgibbon at

(*Continued on page 320*)



The Clyde Lyon School, Glenview, Illinois, built with Teco trussed rafters fabricated by McKeown Bros. Co., Chicago.

Photo by Hedrich-Blessing Studio

Meet Community Needs Quickly, Economically with

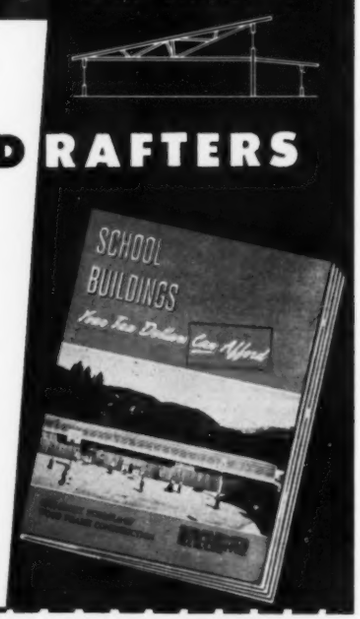
TECO TRUSSED RAFTERS

in one-story

SCHOOL BUILDINGS OF WOOD

Design safe, comfortable schools in timber, specifying TECO TRUSSED RAFTERS, with WEDGE-FIT connectors, and Trip-L-Grip framing anchors.

Timber trusses and framing, ready to erect for schools and other buildings, are available from timber fabricators who are ready to serve you promptly.



SEND FOR *FREE* BOOKLET

TIMBER ENGINEERING COMPANY
1319 18th STREET, N. W., WASHINGTON 6, D. C.

Please send the FREE booklet, "School Buildings Your Tax Dollars Can Afford".

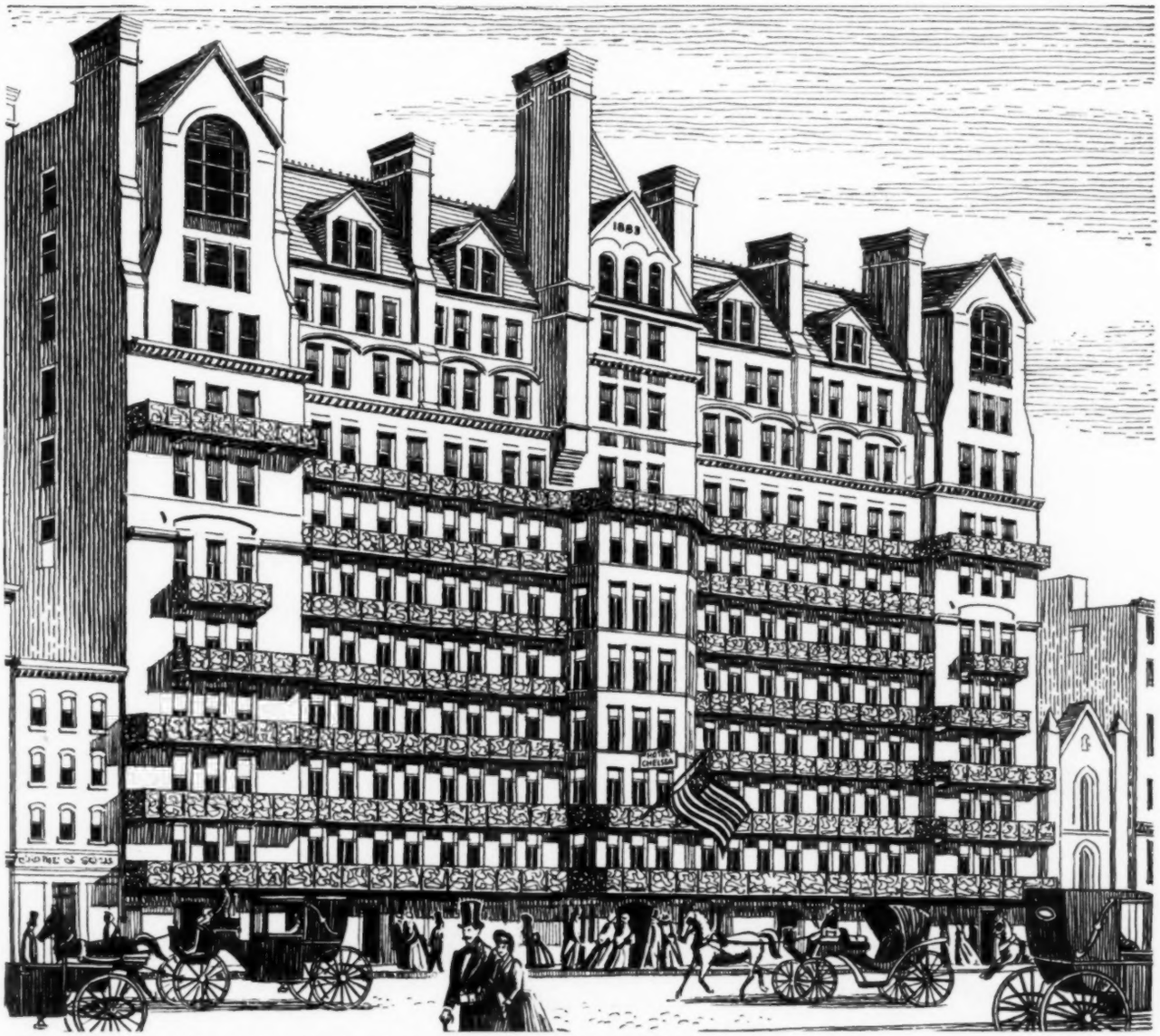
NAME.....

FIRM.....

ADDRESS.....

CITY..... ZONE..... STATE.....

AR-541



HOTEL CHELSEA, WEST 23RD ST., N. Y. C., ERECTED IN 1883, STILL GETTING SERVICE FROM THE ORIGINAL BARRETT ROOF.

71 years of hospitality under one roof!

FOR HOMES TOO — BARRETT DUBLECOTE® MULTI-SHINGLE® ROOFS AS APPLIED TO "SNOW HOUSE" DESIGNED BY R. A. MATERN, A. I. A.

Seventy-one years is a long time for a hotel to stay put and prosperous...especially in such a dynamically changing city as New York. Yet the Hotel Chelsea, though ever modernizing internal decor and services, has since its erection in 1883 been sheltered by the original Barrett Roof.

Such matchless service speaks well for both the roof and the foresight of the architects who wisely selected Barrett. For the weather-tight integrity of Barrett Specification* Roofs has long been the overwhelming choice of generations of America's leading architects. It is for this reason that so many of the country's finest industrial, commercial and public buildings have been provided with the fullest measure of weather protection . . . Roofs by Barrett.

BARRETT DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, New York, Chicago, Philadelphia, Birmingham. In Canada: Montreal.

Allied Chemical

For 100 years—
the greatest name in roofing

1854 1954 CENTENNIAL Barrett

BARRETT ROOFS

*Reg. U. S. Pat. Off.

(*Continued from page 318*)

the same college — led extremely successfully by H. Kamphoefner; all of these plus the inspiring enthusiasm of such men as Louis Kahn from Philadelphia — who teaches at Yale — will build up a wonderful kind of thinking in the scale of esthetics, construction and structures, and will help to advance contemporary architecture.

THIS WAS WHAT I FOUND at Raleigh, but it was not all. The North Carolina State College is doing what is written in the M.I.T. prospectus, which states that educators must be aware that they must educate architects who will not be carrying out their most important work until the '70's or '80's. At Raleigh I really found the atmosphere to suit this statement, an atmosphere which is not that of a school but of an academy. The teacher works together with the student and the student helps the teacher with his scientific work. The students even publish a periodical — and a good one.

AT THE UNIVERSITY OF FLORIDA in Gainesville I found something that resembles the system adopted by Carnegie Tech. I also found there some other things connected with the technique of teaching. There they do not have subjects on their program. They have Architecture I, II, III and so on. I think about 30. And each "Architecture" is one exercise — a project that integrates information and study in all subjects of the appropriate step. They teach all architectural sciences simultaneously and combine them in the same exercise. On each phase of "architecture" they have only two teachers — a designer and an engineering consultant. These two teachers should have a command of all subjects normally taught in conventional universities. Though I do not believe their knowledge can be very thorough, I do believe they represent the "real practicing architects" thus having a good chance of educating more "real" architects than in the conventional way. In any case, this system has to be seriously considered.

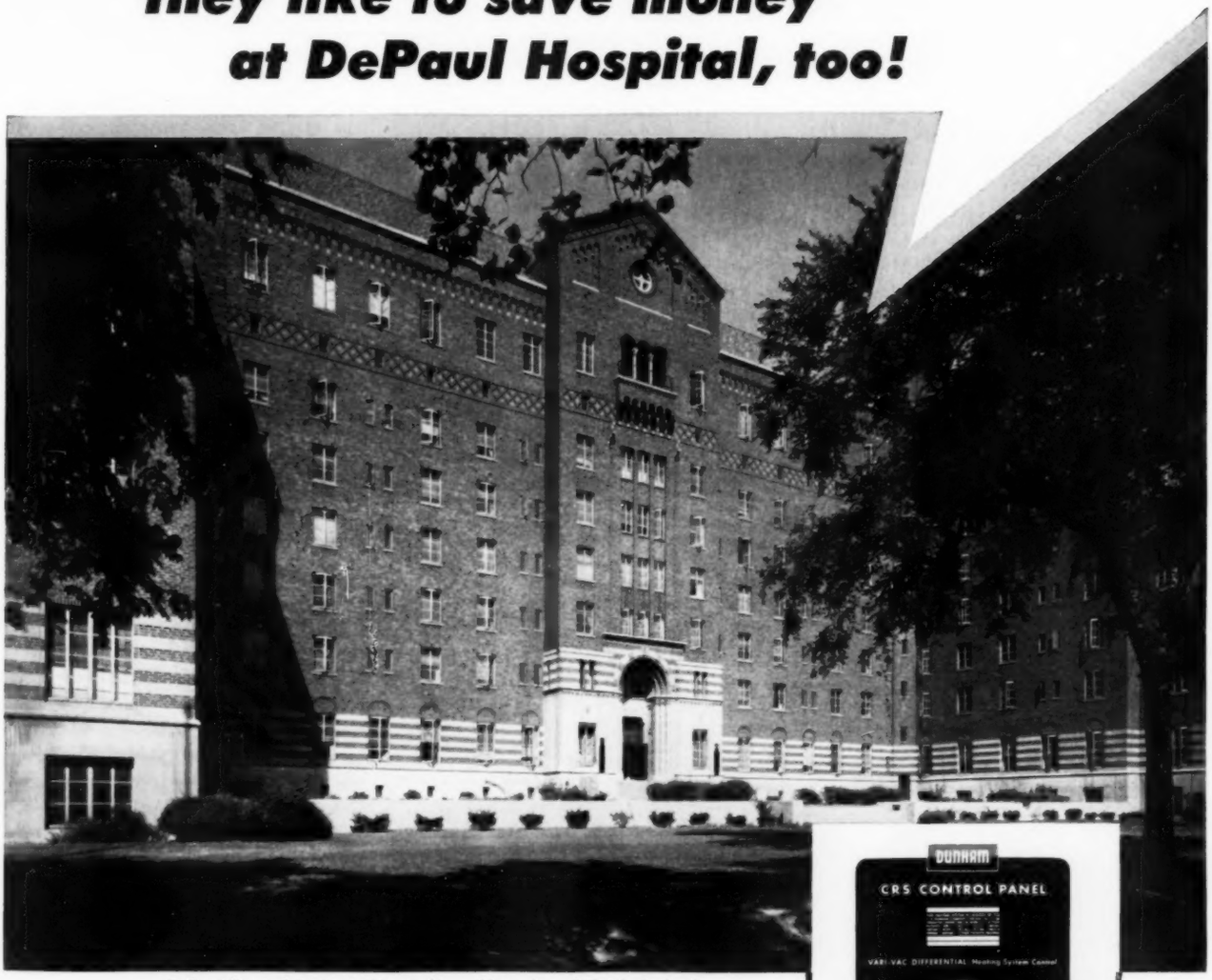
I visited also the University of Houston, which has nearly the same system of teaching as Carnegie Tech.

ON THE WAY TO LOS ANGELES from Texas I paid tribute to Frank Lloyd Wright, in his desert castle in Taliesen West. It was more than thrilling — just to spend a night in that stone-and-wood house built in a boy-scout technique, to breathe the air of romance and art, to smell the desert and to enjoy the sudden storm that comes with the sunset, the magnificent view and the awe-inspiring man himself with his disciples around him.

(*Continued on page 322*)

THE PERFECT
PORCH ENCLOSURE
3 glass panels slide vertically . . . Weatherstripped to fit any climate . . . Full length Lumite screening . . . Extrusion is anodized aluminum . . . Ideal for any architecture.
Truly, the perfect porch, patio or breezeway enclosure!
DeVAC Glass-Walls
DeVAC GLASS WALLS
write for full details...
SELF STORING WINDOW CO., INC.
5901 WAYZATA BLVD. DEPT. A
MINNEAPOLIS • MINNESOTA

they like to save money at DePaul Hospital, too!



DePaul Hospital, St. Louis, Mo. Architect: Maguola and Quick, St. Louis
Mech. Engr: Harry F. Wilson, St. Louis • *Htg. Contr:* Elliott and Barry Eng. Co., St. Louis

47,000 gallons of oil saved with DUNHAM VARI-VAC HEATING

DePaul Hospital, St. Louis, Mo., *saved over 47,000 gallons of fuel oil in a single heating season* . . . after changing over to Dunham Vari-Vac® Heating.

Hospital authorities state, "Even if we'd saved little or nothing on fuel, we'd still call Vari-Vac a good investment because of the greater comfort we enjoy."

Dunham patented temperature controls on high-vacuum steam mains can lower *your* fuel bills, too. That's because outside weather and inside heat losses *promptly* and *automatically* control steam consumption so that *you use less steam.* What's more, you can "zone heat" with Vari-Vac to meet varying conditions of building exposure and occupancy.

Full cost-cutting facts and figures on Dunham Vari-Vac Heating are yours if you just clip and mail the coupon.

DUNHAM VARI-VAC HEATING

RADIATION • UNIT HEATERS • PUMPS • SPECIALTIES

QUALITY FIRST FOR FIFTY-ONE YEARS

C. A. DUNHAM COMPANY • CHICAGO • TORONTO • LONDON

C. A. DUNHAM COMPANY
Dept. AR-2, 400 W. Madison St.,
Chicago 6, Illinois

Please send Vari-Vac literature

Name_____

Firm_____

Address_____

City_____ Zone____ State_____

(*Continued from page 320*)

AT THE University of Southern California in Los Angeles I again found the same "Basic Design." There is a respected professor there who is deputy director of the school. He is in his 70's and I do not suspect that his own education was very modern. His revolutionary spirit must be a function of his age also. It was near the end of the year and in one of the rooms I found an exhibition — models and projects of one problem. I very much liked the solution of the problem itself and was greatly impressed by the standard of work of the students. When the professor came in I asked him whether it was fifth or fourth year work. He answered: "Second year." I was amazed and wanted to know how this standard had been achieved. The professor told me: "You see, these students came to me after they were studying last year . . . ah . . . 'hm . . . you know . . . a new subject . . . what they call 'Basic Design?'" He, personally, had had nothing to do with that; he wasn't even sure of the name. But he admitted that "Basic Design" was the main reason for the success of the project.

BASIC DESIGN" is not like mathematics; it has no tradition and no repetition. Kepés and Philipovsky at M.I.T. teach differently from the people at the University of Pennsylvania, and Roy Jussow at Raleigh teaches in his own way. My impression was that Professor Davis in Gallion's school in Los Angeles has created a curriculum which, to my mind, is the most successful, because he has virtually combined the elements of visual design, contemporary ideas about building materials, Fuller's "atomic" constructions, the functional experience of Bauhaus architecture and Wright's romance.

I visited many more schools and very much liked the University of Oregon in Eugene. That is a very fine school.

FINALLY I CAME TO CHICAGO and to the faculty of architecture at the Illinois Institute of Technology. I also visited the Illinois Institute of Design. This school is *the* school in the United States with respect to the science of "Basic Design." Most of the present instructors of this subject in other institutions graduated from I.I.D. The "shelter design" section and the advanced building research of this institute are being run exceptionally well and it appears that, in future, it will be one of the best schools in the United States.

THIS WAS ONE CHAPTER of my trip — here is the second.

I always thought that one could not detach the problem of architectural education from the profession of architecture and from the so-called building industry (so-called, because it is not yet an industry in the full

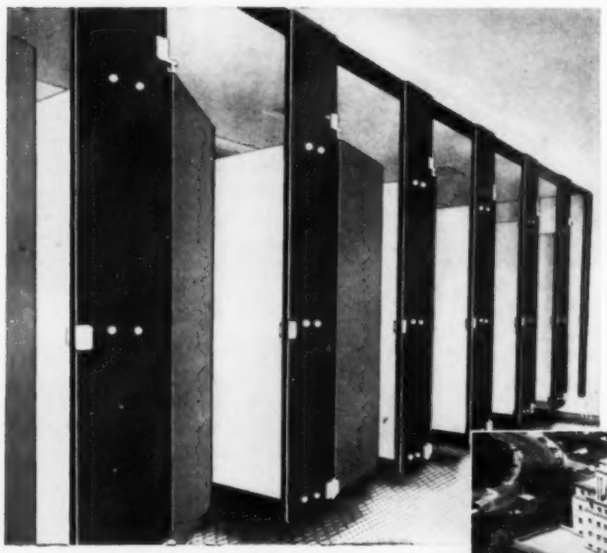
(*Continued on page 324*)

Another FARLITE *Installation*

Guaranteed by Good Housekeeping

. . . AS SPECIFIED, TO INSURE THE VERY BEST IN

PLASTIC LAMINATES



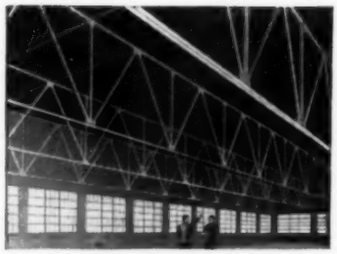
FARLITE PLASTIC DOORS IN WASHROOMS AT HEAD OFFICE OF MANUFACTURERS LIFE INSURANCE COMPANY, TORONTO, CANADA

Whatever the job, you (and your clients) will be better satisfied if you specify FARLITE when you plan new construction or remodel present facilities. It's the very *best* in plastic laminates for partitions and paneling . . . for counter, table and bar tops . . . for a host of other uses. Its glass-smooth surface is easy to clean, permanently beautiful . . . resists heat and burning cigarettes . . . is not affected by alcohol, grease, mild cleaning solutions . . . will not chip or fade.

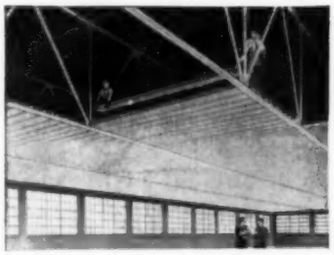
The Farlite laminated plastic chosen for this large office building installation is the same Farlite used in residential, commercial and industrial installations everywhere. Available in a wide range of colors and patterns in sheetstock or made up in 5-ply panels to your specifications.

Write for descriptive folder and name of nearest distributor.

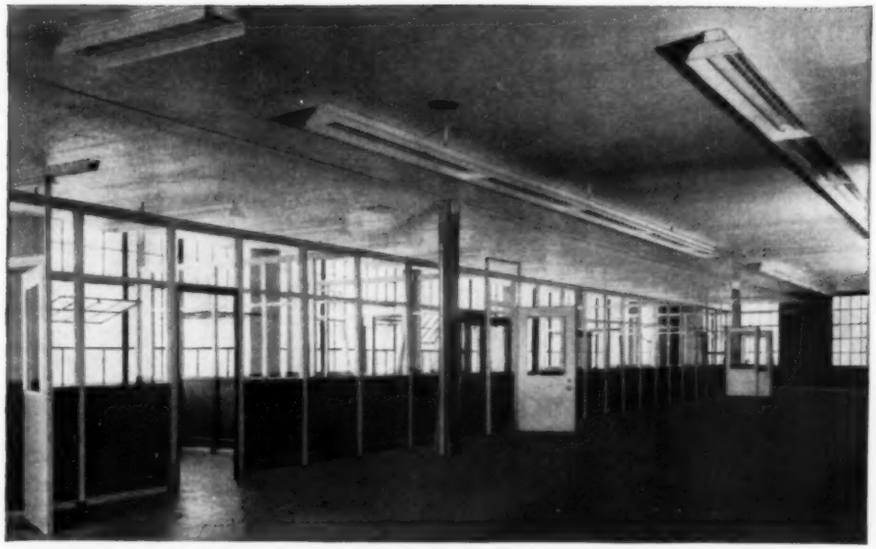
Plastics Division, FARLEY & LOETSCHER MFG. CO., Dubuque, Iowa



To this old factory . . .



they simply did this . . .



to get this . . .

Fenestra acoustical-structural panel ceiling changes old factory into modern office . . . OVERNIGHT!

Out of a sow's ear . . . !

A big Michigan concern needed office space in a hurry and the only available building was an old one-story factory.

Steel beams (the bottom chords of the roof trusses) ran clear across the building . . . every 20 feet.

So they simply laid 20-foot Fenestra* Acoustical-Structural Steel Panels side by side, from one beam to the next. Quickly, inexpensively, the long, strong panels interlocked into a flat, handsome acoustical ceiling . . . and acted as a load-carrying storage floor for ducts, air conditioning, electrical services and such.

While they were doing all this, the company employees went right on working below. Using the first few panels laid as a storage and working platform the installation crew stayed up above. And, of course, there was neither dirt nor dust to shower down below.

They can clean their Fenestra acoustical ceiling with soap and water, or paint it without hurting its acoustical efficiency. And, of course this acoustical ceiling is noncombustible.

Cost?

Less than $1.25 per square foot . . . installed!

If you would like to know more, write to the Detroit Steel Products Company, Department AR-2, 2252 E. Grand Blvd., Detroit 11, Mich. Also ask about the other money-savers you see illustrated below. *®

Fenestra METAL BUILDING PANELS

. . . engineered to cut the waste out of building

"C" Insulated Wall Panels. Width 16". Depth is 3". Steel or aluminum

Acoustical "AD" Panels for ceiling-silencer-roof. Width 16". Depth up to 7½"

Acoustical Holorib foracoustical-structuralroof. Width 18". Depth 1½"

New Acoustical Structural "D" Panels. Width 24". Depth 1½" to 7½".

(*Continued from page 322*)

sense of the word). In order to teach better one must understand the environment in which the pupil is going to work later on and in which the teacher wants him to become a success. Any university is a kind of factory that produces goods, called in this case, "man-brain-power." These goods are "thrown" into the market. One has to know this market in order to succeed in it and also to influence it. I am going to touch on but one small fraction of this problem.

I must admit that, after I landed in New York, I was architecturally confused. During the first few days I had to carry a very big torch in spite of favorable weather, trying hard to discover modern architecture around Manhattan. All that was under construction and that I had seen driving round was old-fashioned and badly-mixed stuff. Later I saw some very good things in New York — even exceptionally good — but too few in quantity. In Philadelphia I passed some housing projects under construction with flat roofs, but attached to the street façade there were false sloping rooms one-and-a-half yards high. I tried to put that out of my mind, but I could not because I saw instances of that practice all over the States. I was in a bad mood; in Israel I always had on my desk copies of magazines like ARCHITECTURAL RECORD, *Forum*, *Progressive Architecture*, and I thought I knew the United States, but actually I only knew the States through the glasses of architectural editors. The big torch did not help me; I could not find easily what I sought, and only then did I realize, dramatically, the truth of what Gropius had said of the 80 per cent of dollars being spent in the building industry in the States without the participation of architects.

On the west coast, and in the southern states, incidentally, I found the situation a little better than on the east coast, but still Gropius was right. So I tried to find out for myself how it could happen, and why. There are a few well-known reasons, but I found one more answer:

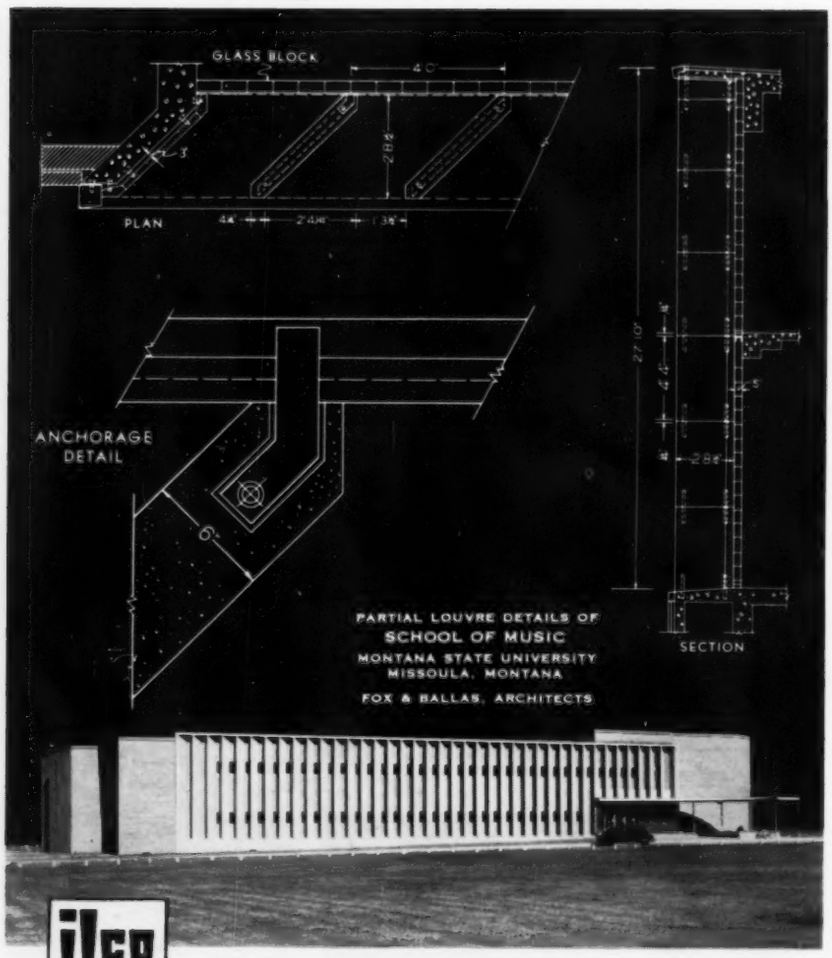
In many schools of architecture and in many universities and institutes of technology, the evil is rooted unconsciously and the procedure goes somewhat like this. A young man is accepted by the school. He is young and he thinks he wants to be and can be an architect, but he is not sure. Those responsible for his education also are not sure. Therefore, for one or two years he tries to learn design, engineering and a few other subjects. Then there comes the time to decide and choose — an option on design, or an option on building or architectural engineering, or even contracting engineering or the building materials industry or simply the business of the building industry. The time to decide comes after an "investment" of two or even more

(*Continued on page 326*)

ilco LIMESTONE

Number 1 of a series

APPLICATIONS IN CONTEMPORARY ARCHITECTURE

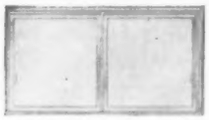


ilco

INDIANA LIMESTONE COMPANY, INC.
BEDFORD, INDIANA
World's Largest Producers of Building Stone

ASK YOUR LOCAL STONE FABRICATOR OR ILCO REPRESENTATIVE FOR ESTIMATES

By using Glide sliding aluminum windows in the Great Western Plains Building in Lubbock, Texas, many economies were made possible . . . Glazing will be done from the inside of the building. A minimum crew will install the windows, also from the inside of the building. The elimination of special window cleaning bolts and costly scaffolding saves dollars and lowers insurance rates . . .



Glide Windows require no painting. They may be cleaned from the inside of the building, and they are guaranteed for the life of the building . . . In addition Glide Windows are unmatched for quality, beauty, and performance. In design, in engineering, in craftsmanship, the architect and builder knows there is no equal to Glide Windows.

GLIDE *WINDOWS, INC. 7463 Varna Ave. N. Hollywood, Cal.*

GENUINE ECONOMY IN INSTALLATION

Architect: David S. [illegible] Co.

(*Continued from page 324*)

years. Since you cannot expect anyone willingly to sacrifice two years of his life, the easiest and most natural decision is to choose a profession which is near to architecture but still has a different name. The decision is justified, too, as the school itself provides this alternative. Oh, yes, they have to provide that, otherwise the responsibility would become much too heavy.

When I tried to understand the problem more fully, in discussing it with the deans of some schools, I was told it is only after one or two years that one can determine whether a student is born with the gift of an architect or not. I think that is too late, and as a result it frequently happens that some students, after being advised that it would be better for them to try something else instead of architectural design, decide on the easiest option and become building engineers, architectural engineers, et cetera.

In some schools these students continue studying architectural design. Then, after graduating and working as engineers, some who are not too conscientious begin thinking: "My teachers said I would not become an architect, well, I'll show them." And so our profession gains new members — *de facto*.

This is something which education, as well as professional authorities, would do well to consider carefully; it is the concern of the state for many reasons.

I believe sincerely in competition. It is quite just between contractor and contractor or between constructor and constructor, but when a structural engineer competes with an architect, then the competition is unfair. I regret that we have only one Institute of Technology in Israel; I would like to have there another college of engineering besides Technion. The interchange of opinions and of experience in different institutions creates the very best chances for the birth of new ideas. But from the national welfare and from the general public point of view, it is not fair, nor healthy, nor profitable for two professions to compete one with the other, and I think something is seriously wrong with such a situation.

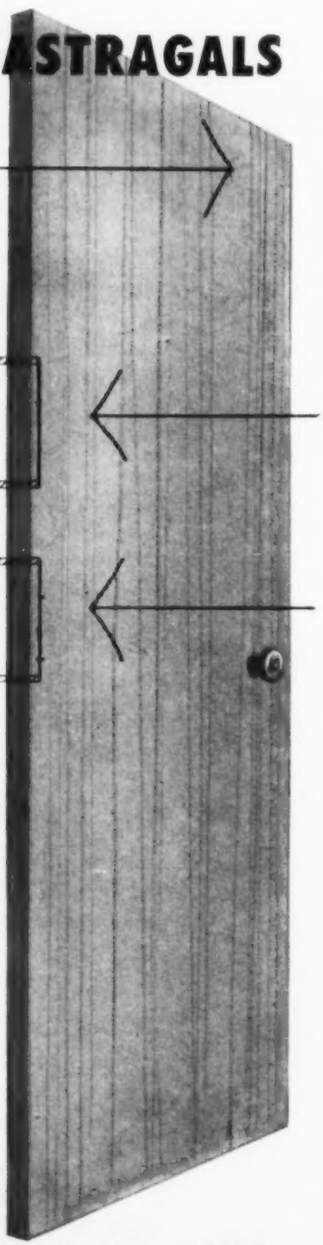
PROBABLY THE FAULT LIES, to begin with, in our schools. I must admit that the same errors occur also in other countries. It is an old weakness, but that should not minimize its importance. It is a problem that has to be faced, clarified and brought to the attention of the organizations concerned.

Having completed my tour of the United States I feel that I have gathered experience and energy and am fully prepared to do my best to help the Israel Institute of Technology advance its methods of teaching architecture which, compared with what I have just seen, are not so bad after all.

MICHAELS *adjustable* ASTRAGALS

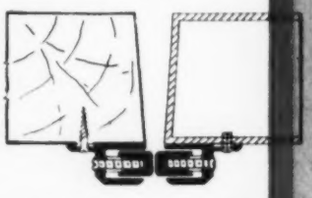
KEEP DOORS CLOSED

. . . help eliminate drafts and air currents . . . keep out dirt and dust. Made of extruded bronze, aluminum or nickel, they are simple, practical, rugged, easily installed and adjusted. Michaels Adjustable Astragals are available in several styles, two of which are shown below.



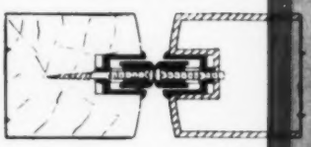
Type A

may be applied to either wood or hollow metal bevel doors, or as a stop bead.



Type E

is for bullnose hollow metal or wood doors (double acting).



Michaels Adjustable Astragals compensate for the expansion and contraction of doors, and close, as nearly as possible, a door of any type. Write today for complete details and prices.

OTHER MICHAELS PRODUCTS

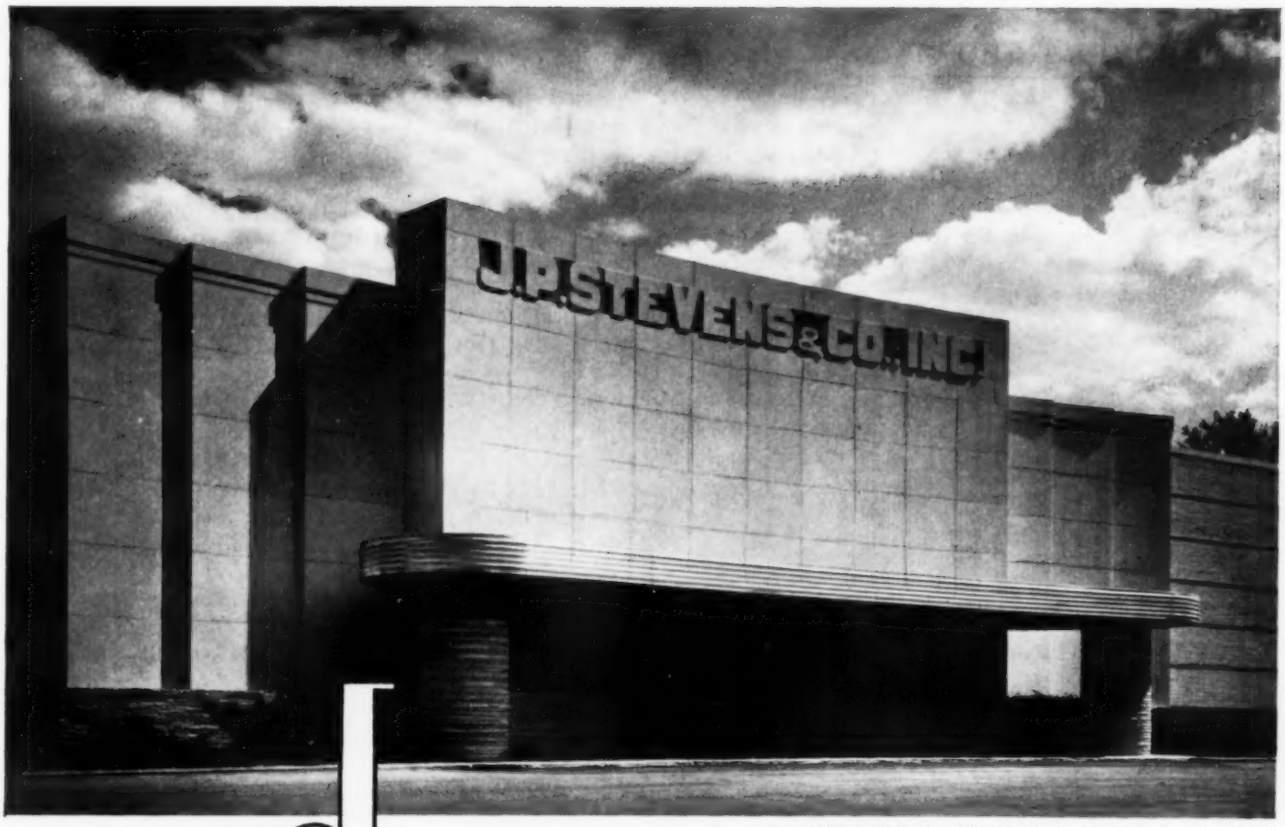
- Bank Screens and Partitions
- Bronze Doors
- Aluminum Doors
- Elevator Doors
- Store Fronts
- Name Plates
- Grilles and Wickets
- Kick and Push Plates
- Push Bars
- Cast Thresholds
- Lettering
- Check Desks (standing and wall)
- Lamp Standards
- Marquises
- Tablets and Signs
- Extruded Thresholds
- MI-CO Parking Meters
- Museum Trophy Cases
- Inurnment Urns
- Stair Railings

Literature on any or all Michaels products will be sent on request.

THE MICHAELS ART BRONZE CO., INC.

234 Scott Street, Covington, Ky.

Manufacturers since 1870 of many products in Aluminum, Bronze and other metals



J. P. Stevens & Co., Inc., Office and Textile Laboratory, Greensboro, N. C.

distinctive design

Architectural concrete slabs help textile firm look "at home" in residential district

Blending this laboratory and office building with its suburban surroundings was a public-relations problem the architect solved with the help of architectural concrete slabs. Made with special aggregates in a matrix of Atlas White Cement, the white and light buff pre-cast sections provide an attractive setting for other textures and colors . . . enhance the over-all beauty of the structure.

There's economy, too. The large, comparatively lightweight construction units reduce building time and labor, speed occupancy, and provide outstanding durability for a minimum of future maintenance. These versatile facing slabs offer the utmost in design flexibility . . . are tailor-made with appropriate aggregates and pigments to secure the color, texture and form desired. Because Atlas White Cement is a true, uniform white, it enhances the rich color values of both pigments and aggregates.

Atlas White Cement complies with ASTM and Federal Specifications. If you would like to have further information, see SWEET'S Catalog, Section 12g/Un and 3d/Un, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

DURABLE 4′ x 5′ sections of architectural concrete offer design facility unmatched by other materials. Raised white letters were cast with individual slabs on reddish-brown background. Architect: Charles C. Hartmann, General Contractor: C. M. Guest & Sons, *Mo-Sai* Slabs by: Mabie-Bell Co. — all of Greensboro, N. C.

AR-WCSL-43R

FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO

UNITED STATES STEEL HOUR — Televised alternate weeks — See your newspaper for time and station.

mum possible extent. I am sure you are familiar with its record and policies.

Commissioner Deheimer said that the use of outside architects by the Reclamation Bureau has never been substantial. He added that it might become greater in line with the policy of encouraging local construction.

The Corps of Engineers said that they use architects almost entirely in connection with military construction projects. On civil works, they depend largely upon their own engineers.

I could not avoid the feeling that many of the agencies were unaware of the potentialities of the architect's profession. Certainly, in most of their transactions, they prefer to deal through their own staff architects rather than with the profession as a whole.

I intend to look further into this question. We face a difficult situation. We must be certain that we are not passing up any bets.

Barring unforeseen circumstances, we have passed a peak in defense appropriations. The trend is toward economy — all along the line.

Nevertheless, the sums to be spent will still be huge. Under the best of conditions, preparedness is not found in the bargain basement.

We have reached a point of diminishing returns in taxation. Congress is in no mood to vote new taxes — not even to replace those which expire in January.

Maintaining a strong defense and reducing taxes at the same time is a neat trick. It can be done only through deficit financing or through rigid economy. I think we are all tired of unbalanced budgets and deficit financing.

The amount of money to be provided for the Federal government will be less — that is a virtual certainty. Therefore, we must learn now to get the most value from our tax dollar.

It will not be easy.

The obvious course is to avoid duplication of effort — to eliminate overlapping functions.

We must learn the proper balance of expenditures for the Army, the Navy, the Air Force, and the development of atomic weapons.

We must cut away useless red tape which often sends government procurement orders through as many as a dozen agencies.

We must plan our construction in line with over-all policies which do not set Federal bureaus working against each other.

As architects, you are uniquely qualified to make a contribution in this field. You have the experience which has given you insight into the problems of coordination.

We are facing an uneasy period in our national life.

The economic signs are disturbing. They do not indicate a depression or even a sizable recession. But the economy is lagging. . . .

We cannot afford to overlook any talent — any pool of highly skilled men — who can contribute to that stability and confidence. I think America's architects represent such a reservoir and that it has not been adequately tapped.

As our problems become more complicated, I feel certain there will be a heavier demand for your services. I know that you will respond with a will and an enthusiasm that will justify the esteem and respect in which your profession is held.

Floor Specifications
Your solution for lasting protection and beauty on every floor you specify.
WOOD
CONCRETE
LINOLEUM
ASPHALT TILE
FLOOR TREATING MATERIALS
FLOOR MACHINES
SCRUBBING MACHINES
WET-DRY VACUUM CLEANERS
Will the floors you specify today be attractive and unscathed by wear ten years from now? They can be with proper maintenance methods.
The Multi-Clean Method of floor care consists of tested and proved procedures for every kind of floor . . . wood, asphalt tile, rubber tile, terrazzo, concrete, marble and many others. It combines the correct materials and equipment with the proper techniques to do a better floor maintenance job faster, easier and more economically. You can depend on The Multi-Clean Method to keep floors new and well protected against hardest wear year after year.
Multi-Clean manufactures a complete line of floor waxes, floor seals, floor treating materials of all kinds and floor maintenance equipment. Write today for complete information.
see our catalog in
ARCHITECTURAL FILE
or write for copy
LOOK IN SWEET'S
Refer to Folio No. 12L Mu Sweet's Architectural File for our 8-page catalog describing the complete Multi-Clean line.
MULTI-CLEAN®
PRODUCTS, INC.
2277 Ford Parkway Dept. AR-2, St. Paul 1, Minn.
THE MULTI-CLEAN METHOD: The Only Complete Floor Maintenance Program Available Through Authorized Distributors Everywhere.

BUSINESS AS USUAL with snow melting!

Snow Melting keeps business "on the go"

Many progressive businesses *make their own weather* as far as controlling the all-winter accessibility of their properties is concerned. For thousands of snow and ice removal systems now assure "business as usual," to the foresighted, by preventing interruptions in the flow of commerce once caused by sudden and heavy snows and surface icing conditions.

Yes, steel pipe snow and ice melting systems do eliminate winter weather transportation delays on driveways and sidewalks, ramps, shipping docks and approaches, parking areas, garage and service aprons, and even private spurs and tracks. So in every business where snow and ice are unfavorable factors . . . from service stations and supermarkets to warehouses and factories . . . snow melting keeps business "on the go."

Steel Pipe of course, is the preferred heat transmission medium for commercial, industrial and domestic snow melting systems. The combination of advantages that has made it the stand-by of industry for heating, plumbing, fire sprinkler systems, power, steam and air transmission, for more than 60 years, also makes it ideal for the panels, coils and runs of snow melting systems.

As ever, for snow melting as for other uses, *steel pipe is first choice* . . . the most widely used pipe in the world.

Send for new, free 32 page color booklet "Steel Pipe Snow Melting and Ice Removal Systems."

Steel Pipe is First Choice

COMMITTEE ON STEEL PIPE RESEARCH
AMERICAN IRON AND STEEL INSTITUTE
350 Fifth Avenue, New York 1, N.Y.

THE RECORD REPORTS

(*Continued from page 316*)

A.I.A. GROUP MEETS TO STUDY NATION'S CAPITAL

Major subjects of discussion at a two-day meeting in Washington of the American Institute of Architects' Committee on the National Capital were the dispersal of government activities and the familiar topic of removal of temporary buildings from the Washington Mall.

Members of the committee heard government officials stress the importance of dispersal from a military standpoint in the light of present-day world tensions. The overcrowded conditions that prevail in Washington, they said, are aggravated by temporary offices.

Secretary of the Interior Douglas McKay was a guest at an informal luncheon following the meeting. He said that he was in favor of the removal of the temporary buildings, but pointed out that the move would be costly.

At the Octagon luncheon for members of the Committee on the National Capital and the A.I.A. Executive Committee, above: Clair W. Ditchy, president of the A.I.A.; Secretary of the Interior Douglas McKay; Maurice J. Sullivan, treasurer of the A.I.A.; Howard Eichenbaum, second vice president of the A.I.A. and member of the Committee on the National Capital; Glenn Stanton, chairman of the committee and a former president of the A.I.A. Below: George Bain Cummings, secretary of the A.I.A.; Cyrus E. Silling, member of the Committee; Secretary McKay; and Mr. Sullivan

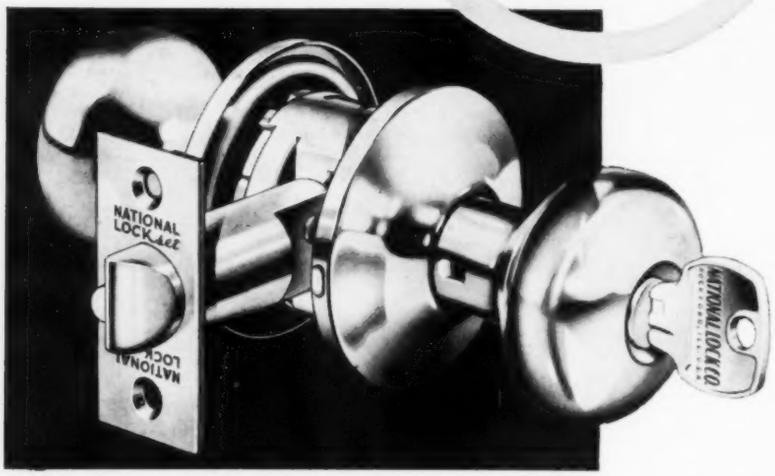
Mr. Stanton, above, in earnest conversation with W. E. Reynolds, Public Buildings Commissioner. Below: Edward L. Wilson, Texas regional director of the A.I.A.; Mr. Silling; Orme Lewis, Assistant Secretary of the Interior; Norman J. Schlossman, first vice president of the A.I.A. and a member of the Committee on the National Capitol.

(*More news on page 334*)

new...beautiful...
long-lasting

series "440"
NATIONAL LOCKset

budget-priced lock...for every home in the block



for all exterior and interior doors

In specifying, NATIONAL LOCKset Series "440", you provide an outstanding product . . . at modest price. The "440" has features usually associated only with more costly lines. Rugged construction . . . no die cast materials . . . wide selection of finishes and split finishes . . . and simple installation. Here's quality at an attractive price.

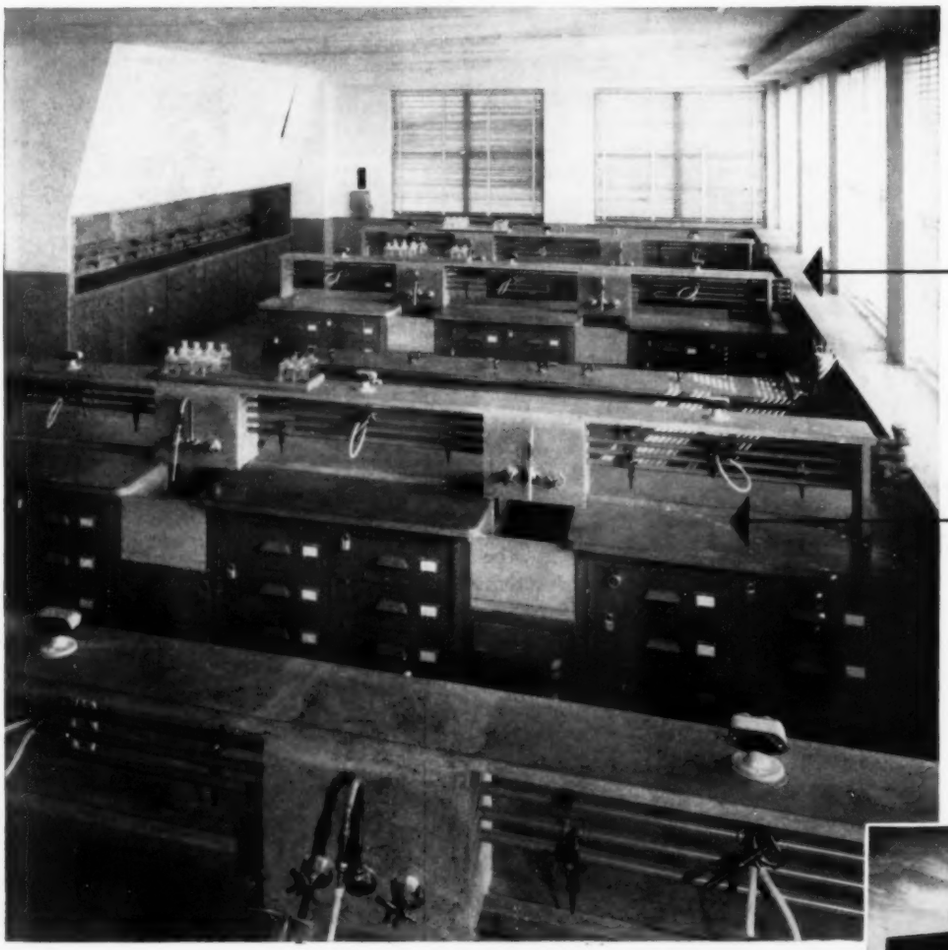
No. 441 and No. 441D KEY LOCK
. . . with turnbutton on inside knob
No. 443 and No. 443D KEY CONTROL LOCK
. . . with plain inside knob
No. 446 and 446D KEY LOCK
. . . with pushbutton on inside knob
No. 442 and No. 442D TURNBUTTON LOCK
. . . for porch and patio
No. 444 PRIVACY LOCK
. . . for bathroom and bedroom
No. 445 and No. 445D PUSHBUTTON LOCK
. . . for porch and patio
No. 448 KNOB LATCH
. . . for interior passage

Write us for Catalog or ask your Supplier

National Lock Company

ROCKFORD, ILLINOIS MERCHANT SALES DIVISION

FOR CORROSION-RESISTANCE IN



Window Stools and Tops . . .

Alberene Soapstone table tops, sinks, shelves, fume hoods and window stools, Ira Remson Hall, Queens College, Flushing. N. Y. Hoods furred down to opening. Fellheimer & Wagner, Archts.

Architects and Institutions Choose

ALBERENE STONE

In the nation's leading schools, colleges, industrial research centers, hospitals – wherever corrosion is a problem – ALBERENE STONE is the choice for window stools (also sills) and laboratory table tops, sinks, fume hoods, and shelving. Because Alberene Stone is a natural material that is highly weather- and corrosion-resistant . . . durable . . . and attractive. And . . . because Alberene Stone is easy to handle – easy to drill and cut.

Our engineers are familiar with the latest developments in all types of laboratory construction. For technical information, write us today.

ALBERENE STONE CORPORATION

419 Fourth Avenue, New York 16, N. Y.

Branches in all Principal Cities

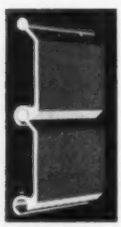
School Architects Specify
COOKSON

EXTRUDED ALUMINUM

COUNTER DOORS

- Lifetime beauty
- Smooth, easy rolling
- Rugged protection

Proved for schools, offices, cafeterias and stores



Midget Slat

Durable slats of "Alumilited" extruded aluminum, resistant to denting, scratching or other damage. Corrossion and rust proof. Nothing to chip or wear off. Requires no painting or maintenance. Easy to clean. Counterbalanced for effortless operation, push-up or with removable crank.

Opens clear, without obstruction. Custom built to specified openings up to 20 ft. wide. Lifetime lubricated ball bearing mounted. Ideal as counter doors, or floor to lintel division between kitchen and multi-purpose rooms, etc.

WRITE FOR COMPLETE CATALOG

with specifications, description and illustrations of extruded aluminum counter doors, steel rolling grilles, steel rolling service doors and Servire fire doors, and specialty doors. Available on request without obligation.

THE COOKSON COMPANY

1539 CORTLAND AVENUE
SAN FRANCISCO, CALIFORNIA

THE RECORD REPORTS

(*Continued from page 330*)

CONOCO WILL CONSTRUCT NEW OFFICES IN HOUSTON

Continental Oil Company, in partnership with the Texas National Bank, is planning to build an office building in Houston. The $10.5 million building, for which Kenneth Franzheim is the architect, will be 21 stories high, and will house Conoco's executive and regional offices. Construction is scheduled to take between 18 and 24 months.

One of the features of the building will be a 12-level parking garage, which will be an open-type structure with 10 levels above ground and two underground. Capacity for the parking space will be more than 500 cars, and the facilities will include four semi-automatic elevators. The garage is to be connected

with the rest of the building by means of a tunnel.

The exterior of the building will be faced with aluminum, face brick and an extruded ceramic material which is similar in appearance to terra cotta. The street level floor will be finished with rainbow granite.

Other features of the building are to include movable partitions in Conoco's offices to provide flexibility in office planning. The building will be completely air-conditioned.

The new building will make it possible for Conoco, whose offices are now scattered in other buildings in Houston, to consolidate its personnel in one place. Conoco will own the top seven floors, and the bank will have the first 10. The two companies will share the top floor. Several of the floors will be rented for office space.

(*More news on page 338*)

AMERICAN
Approved
PLAYGROUND
EQUIPMENT

Unsurpassed in Design, Safety and Performance

● It's the *plus* factor that makes American the most respected name in Playground Equipment . . . *Plus* in design—American leads the field. . . . *Plus* in performance—*Approved* Equipment stronger, more ruggedly built to assure a lifetime of perfect repair-free service . . . *Plus* in safety—for American craftsmen are aware of their responsibility for the safety of your children. Thus, with American you receive far superior design and performance and unmatched safety.

WRITE FOR LITERATURE

AMERICAN
PLAYGROUND DEVICE CO.
ANDERSON, INDIANA U.S.A.
WORLD'S LARGEST MANUFACTURERS OF FINE PLAYGROUND & SWIMMING POOL EQUIPMENT

MIA

Membership in
The Marble Institute of America, Inc.,
is your guarantee that materials
and methods used in marble installations
conform to the highest possible standards.
Patronize your local MIA member.
For membership list, information
or literature describing
marble availability, uses, write:

MARBLE MIA INSTITUTE OF AMERICA, INC.
108 FORSTER AVENUE, MOUNT VERNON, N. Y.

Where SAFETY and DEPENDABILITY COUNTS...

MARCUS dry type TRANSFORMERS

1 of the 19 Marcus transformers installed, with ratings up to 150 KVA.

...are STAR PERFORMERS at the CINCINNATI GARDEN!

Feeding the power where and when needed at Cincinnati's huge and busy "Garden" is another important assignment for MARCUS Dry Type Transformers.

Because all Marcus Dry Type Transformers are now being constructed with Hi-Heat, Hi-Dielectric Magnet Wire, insulation levels of at least 10 times present industry standards are easily attained.

Increase your power Performance Standards with Marcus Dry Type Transformers.

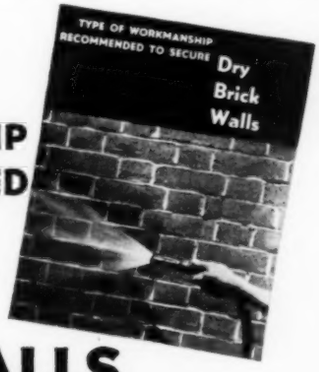
Capacities from 1 to 3000 KVA
- DISTRIBUTION
- GENERAL PURPOSE
- UNIT SUBSTATION
- PHASE CHANGING
- ELECTRIC FURNACE
- RECTIFIER
- WELDING
- MOTOR STARTING
- SPECIAL

MTC "Mark of Quality"

MARCUS TRANSFORMER CO., Inc.
HILLSIDE 5, NEW JERSEY

ONE OF THE WORLD'S LARGEST MANUFACTURERS OF DRY TYPE TRANSFORMERS EXCLUSIVELY

TYPE OF WORKMANSHIP RECOMMENDED TO SECURE



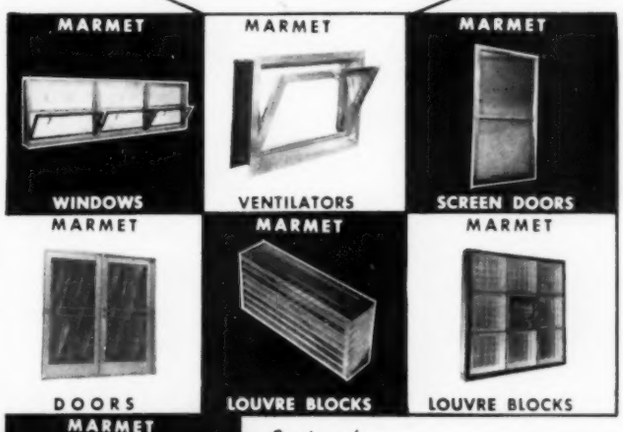
DRY BRICK WALLS

Leaky brick walls are probably the most misunderstood problem in the building industry, and the one about which the most misinformation has been published. Design, workmanship, and materials — all play a part in securing dry brick walls.

Dozens of color photographs illustrating good workmanship and bad, and their effects on leakage, are shown in the book (above). Its conclusions have been endorsed by thousands of leading architects, contractors, bricklayers and manufacturers of clay products. It is used as a text-book in scores of trade schools and engineering colleges. A free copy will be gladly sent you on request. Address Department 3, Louisville Cement Company, Louisville 2, Kentucky.

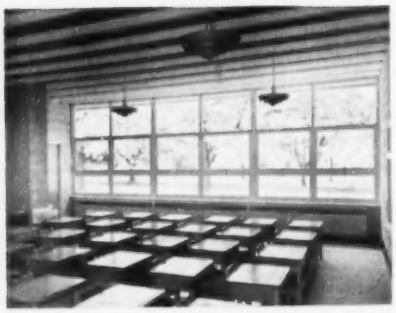
add permanence TO CONSTRUCTION WITH MARMET ALUMINUM WINDOWS, DOORS- GLASS BLOCK FENESTRATION

Aluminum



Write
FOR COMPLETE DETAILS
CATALOGS 54-1, 54-2,
54-3 AND 54-4.

MARMET Corporation
WAUSAU WISCONSIN



Typical classroom, Wakelon Public School, Zebulon, N. C. Architect: Page & Smith, Raleigh, N. C. Heating Contractor: Bullock & Proctor, Raleigh, N. C.

Schools by

PAGE & SMITH USE WEBSTER TRU-PERIMETER HEATING

Wakelon Public School is typical of the modern, low-cost schools in North Carolina designed by Page & Smith, Raleigh, and using Webster Steam Heating Equipment.

Examine the pleasing interior illustrated above. Note the wall-to-wall installation of Webster Walvector blanketing the entire window area and concealing all piping except for hand valve at left.

Webster Tru-Perimeter Heating provides draft-free comfort with window ventilation. The entire heating contract for the six-room school with cafeteria was $11,585, only 9% of the total construction cost.

In addition to Webster Walvector, Webster Equipment for school heating includes: steam heating specialties such as traps, valves and strainers; central Webster Moderator Controls; Webster CF-3 Hot Water Heating Controls; Webster Convectors; Webster-Nesbitt Unit Heaters.

Interested in further facts about money saving in school heating? Get in touch with your Webster Representative, or write us.

Address Dept. AR-2

WARREN WEBSTER & CO.
Camden 5, N.J. Representatives in Principal Cities
In Canada, Darling Brothers, Limited, Montreal

Webster WALVECTOR
For Steam or Hot Water Heating

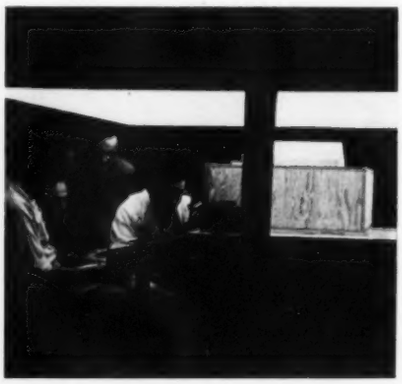
THE RECORD REPORTS

(Continued from page 334)

LIGHTING RESEARCH LAB OPENED AT MICHIGAN U.

A laboratory to be used for the study of daylighting has recently been set up at the College of Architecture and Design of the University of Michigan. The laboratory is intended for use in the college's structural design studies as well as for classroom demonstrations in architectural design courses.

The equipment, which was set up with the advice of Dr. Richard Blackwell and Dr. John Taylor, members of the university's Vision Research Laboratory, consists of a light-diffusing box (the



sky) and a lamp mounted on a curved track (the sun). How it works: a scale model is placed under the box and light meters measure the intensity of light admitted to the building. It is then possible to make an accurate prediction of the actual number of foot-candles and foot-lamberts likely to occur at various times of day with various ceiling materials. It is also possible to control the light to simulate cloudy or bright sunny days.

The laboratory may be used by other architects who want to experiment with skylighting devices. A model of the proposed building, preferably built to a scale of one in. to one ft, and samples of the light-transmitting and light-diffusing materials under consideration should be provided. There will be a small service charge, the university announced, to cover the cost of the actual testing.

The lighting research program is under the direction of C. Theodore Larson of the architectural faculty.

new Koh-i-Noor
VERSATIL HOLDER 5612

THE NEW HOLDER WITH "THE PERFECT KNURL IN THE PROPER POSITION"

Here's the latest Koh-I-Noor push button operated lead holder with the new scientifically designed knurling for sure, slip-proof, tireless operation. It can be used with either Koh-I-Noor graphite or Flexicolor leads. All parts of the Holder, including the chuck, are easily assembled and any necessary replacements will be made by Koh-I-Noor free of charge.

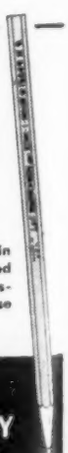
KOH-I-NOOR FLEXICOLOR 1800
"THE NEW COLORED PENCILS THAT FLEX INSTEAD OF BREAKING"

Here's the newest development in colored pencils. A plastic binder imparts unique, pliable strength without a reduction in the marking qualities. Made in 24 colors, hex-round, finished to match color of lead with multicolored end tip.

KOH-I-NOOR DRAWING No. 2200
THE LEADING LEADS

For draftsmen who use the best. Made in 17 uniform degrees, matching precisely the 17 degrees of Koh-I-Noor drawing pencils, and 7 FLEXICOLOR Leads. Packed six leads of a degree to a box—individual compartment for each lead. The name Koh-I-Noor . . . your guarantee of quality and accuracy.

KOH-I-NOOR 1500



FIRST AND STILL THE FINEST DRAWING PENCIL

The original yellow drawing pencil made in 17 precision-perfect grades. First produced over 60 years ago, it is still first among discriminating draftsmen. For finest work use the finest pencil.

KOH-I-NOOR PENCIL COMPANY
BLOOMSBURY, NEW JERSEY

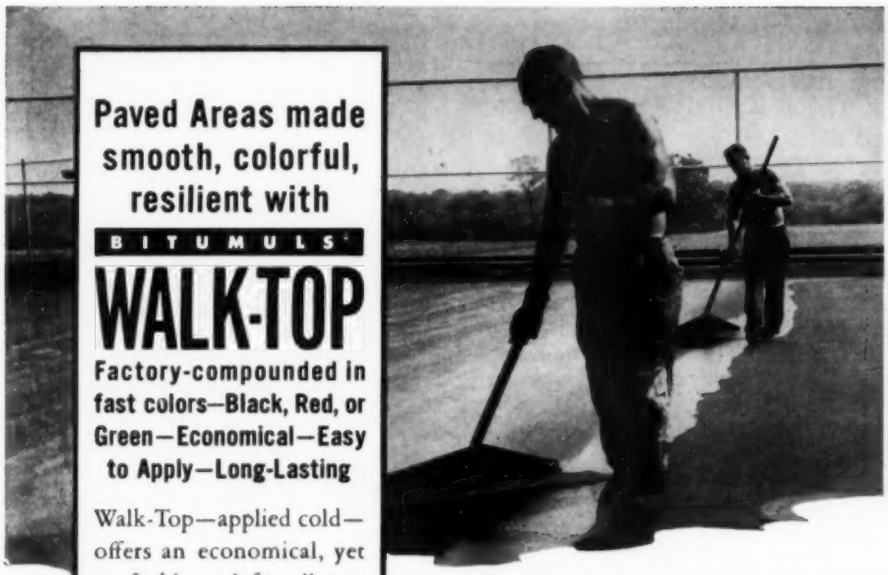
Paved Areas made smooth, colorful, resilient with

BITUMULS'

WALK-TOP

Factory-compounded in fast colors—Black, Red, or Green—Economical—Easy to Apply—Long-Lasting

Walk-Top—applied cold—offers an economical, yet profitable seal for all surfaced areas. In all parts of the country, Paving Contractors and "Hot-Plant" operators stock Walk-Top to supply the current demand for smooth, colorful seal that is grit-free, resilient and weatherproof.



Green Walk-Top surrounds the Statue of Liberty on Bedloe's Island, New York

Home-owners are proud of their neat, distinctive "Walk-Top sealed" driveways

FOR PLAY AREAS—From coast to coast, Walk-Top is *standard* for sealing school yards and other play areas. (San Francisco sealed over 2,000,000 sq. ft. last year!)

WALKS AND PARKING AREAS—Walk-Top is used extensively to provide a smooth, fast-draining and void-filling seal.

FOR DRIVEWAYS—For a clean, enduring and colorful seal, apply Walk-Top cold over the old pavement with brush or squeegee.

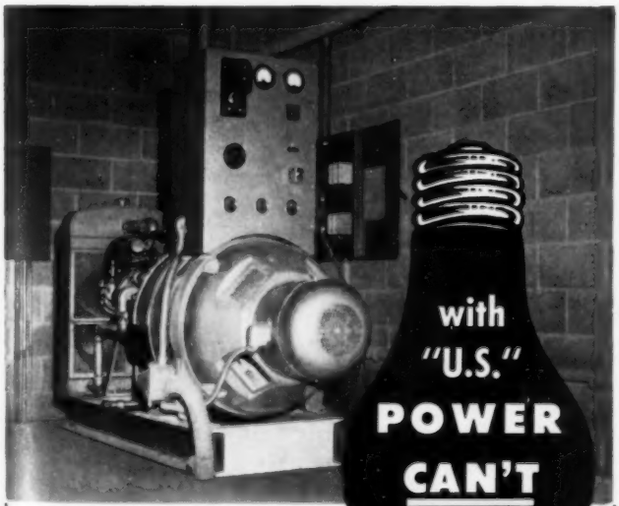
Walk-Top is available through Dealers and Contractor-Distributors.

Write for free illustrated booklets, A-16 and B-20

AMERICAN Bitumuls & Asphalt COMPANY

200 BUSH STREET, SAN FRANCISCO 4, CALIFORNIA

E. Providence 14, R. I. • Perth Amboy, N. J. • Baltimore 3, Md. • Mobile, Ala. • Columbus 15, Ohio Tucson, Ariz. • Seattle, Wash. • Baton Rouge 2, La. • St. Louis 17, Mo. • Inglewood, Calif. • Oakland 1, Calif. • Portland 7, Ore. • Washington 5, D. C. • San Juan 23, P. R.

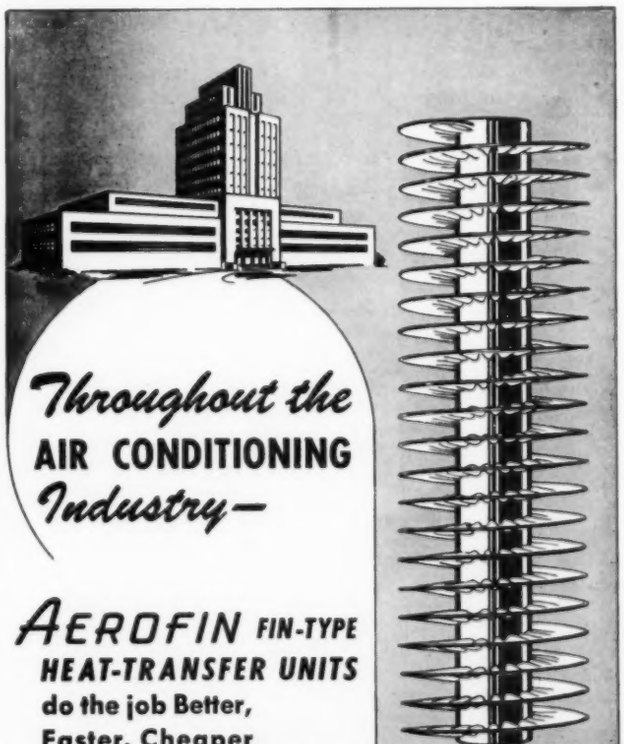


with "U.S." POWER CAN'T FAIL!

Wherever a power failure could cause loss of life or property, specify dependable "U. S." stand-by Electric Plants. "U. S." specializes in this type of unit — and builds the world's most complete line. AC and DC units from 300 watts to 300 KW.

Write for information

UNITED STATES MOTORS CORP.
420 Nebraska Street
Oshkosh, Wisconsin



Throughout the AIR CONDITIONING *Industry—*

AEROFIN FIN-TYPE HEAT-TRANSFER UNITS do the job Better, Faster, Cheaper

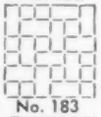
AEROFIN CORPORATION
410 South Geddes St., Syracuse 1, N. Y.

TILES by SPARTA

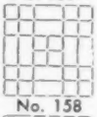
Spartan Mosettes

No. 352

No. 110

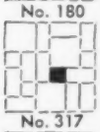

No. 183

No. 130


No. 158

No. 180

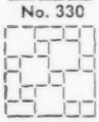
No. 320

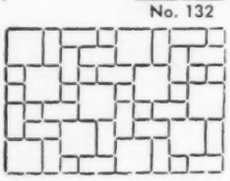

No. 317

No. 192

No. 330

No. 132


No. 360


Right: No. 300

These unglazed ceramic tiles are fired at high temperature, assuring ruggedness, impermeability, slip-resistance, and a high degree of vitrification. Available in sizes 1x1, 2x1, 2x2, ¼" thick in the following wide range of colors: Golden Pheasant, Ember Glow, Light Grey, Dark Grey, Brown, Red, Light Green, Dark Green, Spartan Blue, Ivory and Black. The following Mosette colors are supplied in sizes 2x1 and 1x1 only: Pearl Grey, Cream, Pink, Canary and Dresden Blue.

Mosettes are extremely versatile and easy to set in irregular shaped spaces.

Write for complete information.

Practical for Floors in

SCHOOLS • HOSPITALS • INSTITUTIONS
also SWIMMING POOLS

THE SPARTA CERAMIC CO.

P.O. BOX 2, EAST SPARTA, OHIO

REQUIRED READING

(*Continued from page 46*)

KENNEDY Continued

over in many sections of the country, but is still going strong in New England. This is fortunate in one respect — it has stimulated the writing of this book, which would probably not have been nearly so interesting nor so carefully thought out if the fire of the battle were not in the author's eye. By the traditionalists, Mr. Kennedy is doubtless considered to be a very radical young man. But among the modernists he would be placed well to the right of center. He is essentially a conservative New Englander.

The many illustrations contribute much to the interest of the book. They range widely from Steinberg to Letarouilly and even include a few modern houses. The book is handsomely produced marred only by occasional mechanical defects that make it hard to follow across some of the two-page tables. The author has a mild mania for tables and charts, and probably never says "good morning" without mentally diagramming it. These devices are sprinkled generously throughout the book and are usually helpful, sometimes brilliantly so.

"The House and the Art of Its Design" discusses everything about the theory and practice of house architecture except how to make a living at it. The author remarks that, even with a fee of twelve per cent, many jobs are unprofitable. Not many people are willing to pay that much for an architect's services. The result is that most architects in this field find it necessary to subsidize their practice in one way or another. Those who have neglected to acquire a rich wife, often take to part-time teaching, writing, research or consulting work. Mr. Kennedy, for example, has been teaching for some years at M.I.T., the jacket informs us.

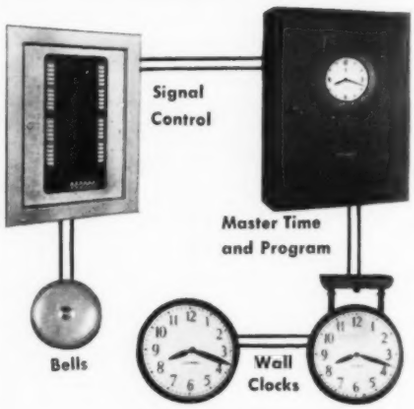
In a profession dominated by big firms, the "little" architects who design houses often feel like step-children. Even the material salesmen are scornful of them. This book is recommended for raising the morale of house architects. A good part of the tonic effect derives from the author's apparent unawareness that this situation exists. It would never occur to him that any architect who designs houses and does it seriously and capably, would have any reason to feel apologetic about it.

(*Continued on page 346*)

DEPENDABLE

STROMBERG

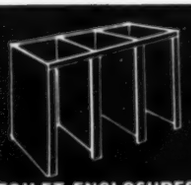
COMPLETE CLOCK AND PROGRAM SYSTEMS *for* SCHOOLS • HOSPITALS PUBLIC BUILDINGS • PLANTS



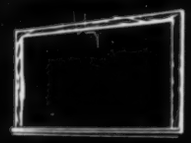
Stromberg time systems maintain the ***complete accuracy of each unit.*** They are timed by a synchronous motor Master Unit that has a jewelled spring power emergency reserve. Every clock on the system can be maintained at a correct time ***even during a power failure.*** Stromberg time systems include a master control, program unit, signal control panel, bells and buzzers, standard clocks, skeleton dial clocks, tower clocks and time recorders.

for complete information write

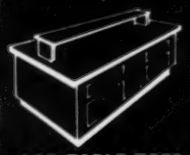
STROMBERG
TIME CORPORATION
GT *subsidiary of general time corp.*
THOMASTON, CONNECTICUT



TOILET ENCLOSURES



CHALKBOARDS



LAB TABLE TOPS

SHOWER STALLS

500 Million years in the making

NATURAL SLATE...

AN INVESTMENT IN DEPENDABILITY

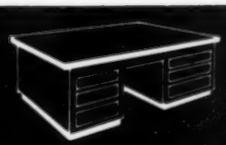
MORE THAN 100 USES

It's a wise decision when you specify Natural Slate . . . . for only with slate do you reap the benefits of long, worry-free service at exceptionally low maintenance cost. It is sanitary, durable and strong. It can be finished to a velvet-like smoothness and, because of its neutral color, will harmonize with any decorating scheme. It is one of the least absorptive of Nature's products and will not contract or expand.

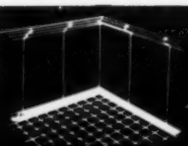
For your protection, insist on slate quarried in Pennsylvania, U. S. A.

NATURAL SLATE BLACKBOARD CO.
and THE STRUCTURAL SLATE CO.
PEN ARGYL, PENNSYLVANIA

ROOFS

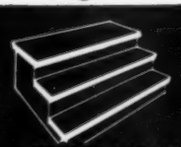


MAP TABLE TOPS



WAINSCOTE

WINDOW SILLS



TREADS & RISERS

Valuable Floor Space..SAVED!

WHAT ABOUT THIS AIR CONDITIONING INSTALLATION FOR LOBLAW'S GROCETERIA, FRANK? THEY JUST CAN'T AFFORD TO SPARE THE SELLING SPACE FOR STORE CONDITIONERS.
YES, I KNOW...BUT I DID GET AN IDEA FROM THIS USAIRCO CATALOG. WE COULD USE AN RK--YOU KNOW, THEIR CENTRAL STATION PACKAGED UNIT.
SAY, RK COMES WITH AN EVAPORATIVE CONDENSER... ELIMINATES THE NEED FOR A COOLING TOWER.
AND WE CAN INSTALL IT IN THE BACK ROOM!...WITH DUCTWORK LEADING TO DIFFERENT AREAS OF THE STORE.
SOUNDS LIKE OUR ANSWER...AND IN THE BACK ROOM, THINK HOW EASILY IT CAN BE SERVICED.
THE RK WON'T TAKE AN INCH OF THEIR SELLING SPACE, EITHER.
I'LL GET OUR USAIRCO MAN ON THE PHONE NOW... LOOKS LIKE WE'RE READY TO DO BUSINESS!

. . . and that's how it all started. The Loblaw Groceteria of Hamilton, Ontario, installed a USAIRCO Refrigerated Kooler-aire 30 H.P. The RK is located in the store's back room to conserve important selling space. Fresh air intakes are hooked up to one central penthouse atop the existing building. 6900 square feet of selling area are cooled in summer, comfortably ventilated in winter.

Address Inquiries to Dept. AR-24

UNITED STATES AIR CONDITIONING CORP.
MINNEAPOLIS 14, MINNESOTA
Export: 13 E. 40th St., N.Y. 16, N.Y.

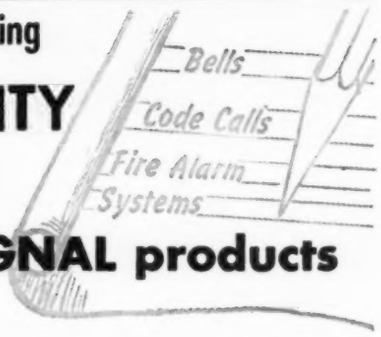
EVERYTHING IN AIR CONDITIONING
USAIRCO

You are specifying

RELIABILITY

when you

select SIGNAL products



Fire Alarm Systems (Interior & Exterior)

Signal Devices

Code Call Systems

Write for Catalogs FSC-7

You can expect complete reliability from products engineered and manufactured by Signal Engineering & Mfg. Company, originators of A-C Fire Alarm Systems and the Underdome Bell. Some of the SIGNAL products of special interest to the building industry are:

- ★ **Interior Fire Alarm Systems (coded and non-coded types) complete with wall boxes, control panels and signal devices,**
- ★ **Single-stroke and vibrating bells in various sizes; chimes, cow bells and horns**
- ★ **Code Call Systems for instant communication with individuals away from desks or benches.**

Engineering Representatives in Principal Cities.

Wheelock SIGNAL
ENGINEERING & MFG. CO.
LONG BRANCH, NEW JERSEY

Work Miracles on BUDGET PLANS

Specify

EASILY INSTALLED ★ LOW-COST

Veni ★ flex

WOVEN WOOD SLAT

FOLDING DOORS and ROOM DIVIDERS

RESIDENTIAL

Specify **Veni-Flex** to increase usable living space and cut costs. For room division, clothes-closet or wardrobe . . . add modern beauty wherever privacy with ventilation is indicated. Choice of 11 decorator colors.

COMMERCIAL

In step with modern functional design, **Veni-Flex** is specified for store window backgrounds, dressing-room privacy. Ideal for hospital room separation. Recommended for motels, offices, where space-saving is required.

INDUSTRIAL

Veni-Flex for room separation is practical in modern factories, laboratories, and small plants where free-flow of air-conditioning circulation is a problem. Ease of installation and low cost make **Veni-Flex** doors practical.

WRITE FOR DESCRIPTIVE VENI-FLEX FOLDER

CONSOLIDATED VENETIAN BLIND COMPANY
A Division of
CONSOLIDATED GENERAL PRODUCTS, INC.
24th and Nicholson Houston 8, Texas

REQUIRED READING

(*Continued from page 48*)

COMMERCIAL BUILDINGS
Continued

building types has not been neglected. The chapters on "New Departures in Office Building Design" by Lathrop Douglass, architect for the excellent "Exficio Esso" in Caracas, Venezuela and the Esso Building at Baton Rouge, Louisiana, in association with Carson and Lundin, as well as the article on "Small Business Buildings" by Frederick Arden Pawley, architect, should be invaluable to the uninitiated designer and extremely useful as a refresher on fundamentals to the expert in the field.

The trek to the suburbs of commercial buildings, parallelling the great "branch department store" activity in periphery, is well documented by many excellent examples of this type of project.

The examples of successfully altered commercial buildings and interiors are too scattered and too inadequately detailed for purposes of comparison, but they do serve to complete the panorama of information.

Far too few examples of outstanding building designs of our foreign colleagues were included. The office building, for Sao Paulo, Brazil, designed by Rino Levi and Roberto Cerquira Celar, can arouse a healthy feeling of humility in American architects. Raymond and Rado's excellent building for Reader's Digest in Japan might certainly have been included as an outstanding illustration of a skillfully designed commercial building constructed out of this country from plans by American architects.

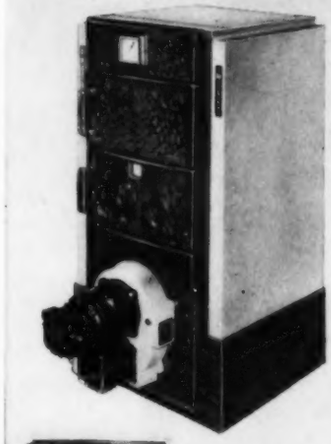
Pertinent information on supplementary banking facilities now coming in wider and wider use throughout the country is included in the section on "Drive-in Banks." In the Six Points Branch of the First National Bank of Arizona designed by Edward L. Varney, Associates, the casual, almost residential, approach to bank buildings serving as "Drive-ins" is refreshing to see.

It is quite evident from the material presented that, with the exception of some minor examples, the only real innovations in the design of railroad buildings are being introduced in Europe.

Radio, television and theater buildings have evidently not been as widely built as the immediate postwar news would have led us to believe, judging from the rather thin coverage of this

(*Continued on page 350*)

H. B. SMITH "100"
BOILER-BURNER UNIT



● MORE ADAPTABLE
● BETTER LOOKING
● LOWER COST

Ideal for the average home installation

Since its introduction, the "100" Boiler-Burner Unit has been a prime favorite with heating contractors, architects and builders. Latest improvements make it adaptable for practically every home of average or "average-plus" size. Taking up no more space than a large wardrobe trunk, the "100" is available with a line of tankless heaters with capacities up to four gallons of hot water per minute.

Improved Appearance — Attractive jacket in new Centennial "Hammertone" blue enhances the appearance of the entire unit.

Lower Cost — With low initial investment and negligible maintenance cost, the "100" Boiler-Burner Unit provides a top-quality installation where building budgets are modest.

Now, more than ever before you can specify the Smith-Mills "100" for BIG boiler performance in a residential unit.

H.B. Smith
CAST IRON BOILERS
H. B. SMITH CO., INC.
Westfield, Mass.
Established 1853
A CENTURY IN '53 —
OUR YEAR OF GREATEST PROGRESS

USE THIS NEW SAFETY MATERIAL ALL OVER YOUR PLANT

Work platforms

Flooring

Gutter Covers

Partitions

Safety **GRIP-STRUT** Pat. Pending

NON-SKID—RUGGED—LOW COST

Safety Grip-Strut is a new basic material. All one piece, steel or aluminum, in various sizes and gauges. Sold like lumber, used like lumber and stocked in your storeroom like lumber. Ideal for on-the-job fabricating. Not welded, riveted or expanded. It presents an open space, in a diamond shaped pattern, in excess of 75% of the area for ready access of light and air and gives a positive NON-SKID footing in all directions. Ideal for stair treads, fire escapes, cable trays, work platforms, catwalks, flooring and for original equipment safety treads. Your own mechanics can install it—it's inexpensive, yet permanent and safe.

Write today for new catalog showing loadings and methods of easy application in your plant.

Distributors in all principal cities.

GRIP-STRUT division
THE GLOBE COMPANY
Manufacturers since 1914
4020 S. Princeton Ave. • Chicago 9, Ill.

Waterproofing and Protective Products
Wood Finishes and Waxes
Consulting Engineers on
Waterproofing Problems

•

1904 **Fifty Years of Service . . . Proof of Performance** 1954

MINWAX COMPANY, INC.
11 West 42nd Street, New York 36, N. Y.
Representatives in leading cities

PENN VENTILATORS

provide dependable ventilation where it's needed . . .

Ganteaume & McMullen, Engineers-Architects

AMERICAN STORES
BAKERY AND WAREHOUSE
Philadelphia, Pa.

Fresh food — fresh air . . . literally hundreds of Penn Ventilators keep the air clear at the American Stores' vast, new bakery and warehouse in Philadelphia.

Whether your problem is to ventilate a bakery and warehouse 5 city blocks long or to exhaust air from a small storage room or grill, it will benefit you to work with the Penn Ventilator man in your area. He has the complete roof ventilator line to fit your requirements. Count on his qualified advice on your next ventilating problem.

Complete Literature Available—write to Engineering Department

PENN VENTILATOR COMPANY

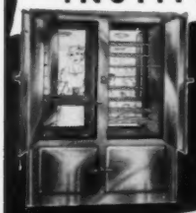
Representatives and Distributors in principal cities

PHILADELPHIA 40, PENNA.

FOR MORE THAN 25 YEARS THE BUILDERS' TOP LINE

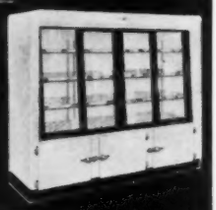
1st CHOICE for HOSPITALS SCHOOLS CAFETERIAS and INSTITUTIONS

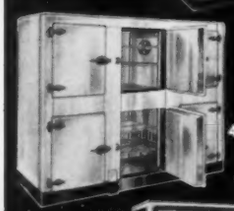
THE MARK OF A GOOD CASE
THE P-H LINE
ESTABLISHED 1898



PASS THRU CABINETS
3 Models
6, 9 & 12 Doors

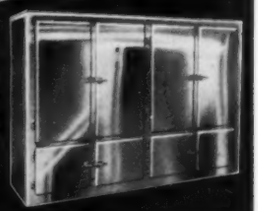
DAIRY-DELICATESSEN CASES
5 Models





STORAGE FREEZERS
3 Models
4, 6 & 8 Doors

REACH-IN CABINETS
51 Models
20 to 90 Cu. Ft.



DRY BEVERAGE COOLERS
7 Models
Remote & Self-contained

Lifetime FEATURES

★ Lifetime Porcelain or Stainless Steel Finish ★ 3" Fiberglass Insulation
★ Patented "Grad-U-Matic" Air Conditioning ★ Sag-Proof Door Construction
★ Tubular Electric-Welded Steel Frame
★ Solid or Triple Thermopane Glass Doors
★ Automatic Self-Defrosting Freezing System ★ Underwriters Approved. Complete Line of Dough Retarders, Baked Goods Freezers, Walk-In Coolers Also Available.

See Your Nearest Dealer or Write Factory For Complete Illustrated Literature.

PUFFER-HUBBARD MANUFACTURING COMPANY
GRAND HAVEN, MICHIGAN
EXPORT OFFICE — Puffer-Hubbard International, 440 Lafayette St., New York City. Cable "Manrefsup"

REQUIRED READING

(*Continued from page 346*)

subject. Among others, the preview of C.B.S. Televison City by Pereira and Luckman as well as the interesting little theaters of Schlanger and Hoffberg and Reisner and Urbahn, show the progress in this design field. Valuable information on the acoustical design of the theater and data on drive-in moving picture theaters add to the usefulness of this section.

Commercial Buildings can be a valuable addition to the libraries of all designers in that field and should also be of interest to architectural historians interested in this recent era.

REINFORCED BRICK MASONRY

By ERNEST MICKEL

Reinforced Brick Masonry — Lateral Force Design. By Harry C. Plummer and John A. Blume. Structural Clay Products Institute (Washington, D. C.) 1953. 9¼ by 6 in. 271 pp. illus.

Increased attention to hurricane and cyclone damage in the U. S. last year, the new interest in building to resist atomic and H-bomb blasts and the older influence of earthquake forces have all served to focus attention on a new book published by the Structural Clay Products Institute.

Reinforced Brick Masonry and Lateral Force Design was written by Harry C. Plummer, author of the SCPI book, Brick and Tile engineering (1950), who is known to architects and engineers as director of SCPI's engineering and technological activities.

This book was written to fill the gap in the brick and tile industry's literature for a concise presentation of its scattered data on masonry performance, both reinforced and unreinforced, particularly as it related to lateral forces instigated by wind, blast or earthquake.

It is believed the new book will have a particular application in the field of industrial buildings such as low factories and schools, although it treats use of RBM in housing construction as well.

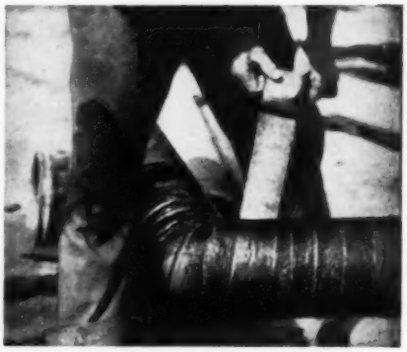
SCPI's survey of architects and engineers east of the Rockies showed that few architects east of the Rockies had much technical knowledge of reinforced brick building practices. Although the method has long been used in almost 100 per cent of masonry building in California because of the earthquake threat, its adaptation on projects east of the

(*Continued on page 354*)

TO COMBAT CORROSION

Specify TAPECOAT

...the Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings and Tanks



TAPECOAT is a coal tar coating with a tar-saturated, close-woven fabric as a carrier for easy application, providing a *natural* protection against corrosion.

TAPECOAT serves as both bond and protection...requires no foreign adhesive.

TAPECOAT resists moisture, acids, alkalis, soil stress, electrolysis, chemical fumes, fly ash, salt water, salt-laden air, barnacles and other severe corrosive and abrasive conditions.

TAPECOAT is clean to handle and easy to apply by spiral or "cigarette" wrapping with the use of a torch to bleed the coating for a bond to the surface. It cuts maintenance and replacement costs.

SIZED TO THE JOB

TAPECOAT comes in rolls of 2", 3", 4", 6", 18" and 24" widths to meet varying requirements.

TAPECOAT has proved its dependability for gas and oil companies, railroads, telephone companies, air lines, ship builders and operators, water and sewage works, chemical and industrial plants, engineers and contractors ... In combating corrosion both underground and above ground.

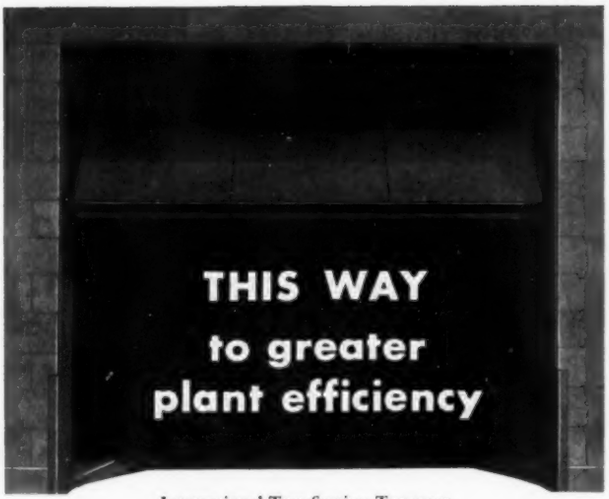
PROVED IN SERVICE SINCE 1941

Write for descriptive brochure and prices

The TAPECOAT Company

Originators of Coal Tar Tape Protection

1547 Lyons Street, Evanston, Illinois



International Two-Section Turnover Door — ideal for installation where interior clearance is limited.

Both materials handling and heating costs are significantly determined by the efficiency of plant entrances. Designing and building doors for America's major industries — doors of every type and size including the world's largest—has qualified International to be of help to architects planning such installations. Write us about your specific problem. See our catalog in Sweet's Architectural File.

INDUSTRIAL DOOR DIVISION

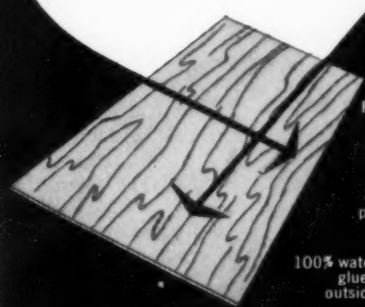
INTERNATIONAL STEEL COMPANY

1961 Edgar Street **Evansville, Indiana**

Design with DFPA Grade-Trademarked

FIR PLYWOOD

1 Does More Jobs — Better
2 Gives Two-Way Strength
3 Lower In-Place Cost
4 Appearance Value
5 Tested Quality



SPECIFY BY THESE DFPA GRADEMARKS

For roof, wall sheathing, sub-flooring — PLYSCORD

For built-ins, paneling, etc. — PLYPANEL

100% waterproof glue for all outside uses — EXT-DFPA

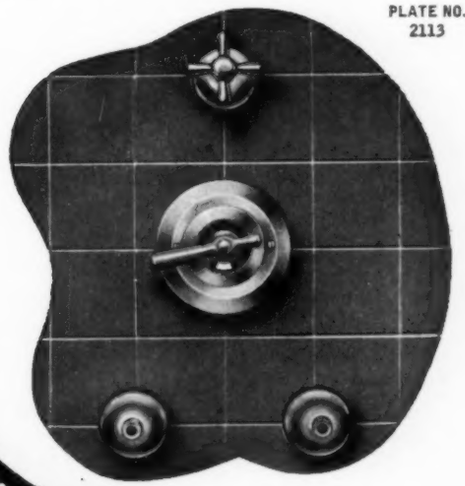
Write Douglas Fir Plywood Assoc., Tacoma 2, Wn., for 1954 Catalog

NOW and ten years from NOW

. . . contented customers will confirm YOUR reputation!

. . . the best insurance YOUR REPUTATION can have! Finished in polished chrome where exposed, the model BC Concealed Thermostatic Shower Mixing Valve has all sliding parts of stainless steel for corrosion proof operation. Actual tests show that the model BC gives highest degree of control . . . BE SURE . . . WITH "BC."

PLATE NO. 2113



Compare!

List the facts . . . Check them off . . . Lawler comes out first every time! YOUR REPUTATION is protected!

LAWLER "BC" SHOWER MIXING VALVE

- Integral Shut Off.
- Stainless Steel in All Sliding Parts.
- Non-ferrous Hydraulically Formed Bellows Type Thermostat.
- Positive Hot Non-scald Shut Off.

The Lawler Line — Thermostatic Controls

"Performance-Tested" for Longer Life

STEAM TEMPERATURE REGULATORS · SHOWER MIXING VALVES · WATER CONTROLLERS · TEMPERING VALVES

LAWLER AUTOMATIC CONTROLS, INC.

453 North MacQuesten Parkway **Mount Vernon, New York**

STAXAUSTER can be used to convert all types of roof ventilators into powerful exhaust or air supply units.

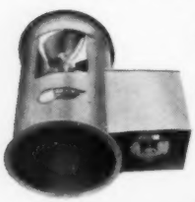
Allen

EXHAUST FANS

Solve Industrial Ventilating Problems Everywhere

Sturdily constructed, economically operating Allen Fan Sections, one shown above, and other types of Allen Exhaust Fans, are engineered to do a completely dependable job. The Staxauster is available in many sizes, including the Remote Drive type shown below—ready to be combined with various stack heads (Allen or other makes) to meet a wide range of needs. Its reputation for reliable performance has been gained through highly satisfactory operation on hundreds of industrial rooftops.

For your wall installation needs, Allen Exhaust Fans and Lo-Noiz-Level Multiblade Fans are recommended.



Remote Drive Allen Staxauster At Left

- **Representatives in principal cities listed in our catalog in Sweet's Architectural File, Section 20b.**
- **Write for catalog.**

ALLEN ENGINEERED VENTILATION

PRODUCTION PLANNING CO.

ROCHESTER, MICH.

Roof Ventilators for Every Industrial Need

FILL OUT AND SEND COUPON

PRODUCTION PLANNING CO.
ROCHESTER, MICH.

Please send me informative literature on your complete line of roof ventilators.

Firm _____

Name _____

Position _____

Address _____

City, State _____

REQUIRED READING

(Continued from page 350)

earthquake zone has been extremely limited.

Construction with reinforced brick is not new; in fact, the method has been used in this country to some extent since 1922. Tests have been conducted since 1930, and the Plummer-Blume book now brings under one cover the results of all these surveys and outlines a simplified application of lateral force stresses for the architect.

OTHER BOOKS RECEIVED

The Origin and Development of Early Christian Church Architecture. By J. G. Davies. Philosophical Library (New York) 1953. 5¾ by 8¾ in. 153 pp., illus. $4.50.

This volume which deals only with the first six Christian centuries, offers a brief survey of the early growth and development of Christianity to provide an historical and geographic background to the subject of church architecture. It discusses the origin of the basilica, and examines the central type of architecture with its divers plans, rounds, octagonals and cruciform. In conclusion, after description of furniture and appointments of the church and adjoining buildings, a short and generalized account is given of the several forms which Christian architecture assumed in different countries. The book is well illustrated with plates and 45 ground plans of early Christian Churches.

Adhesives for Wood. By R. A. G. Knight. Chemical Publishing Corp. (New York, New York), 1952. 8½ by 5½ in. 242 pp. illus. $5.00.

A guide on joining wood as well as joining wood to metals and plastics, designed for younger technicians and experienced men, this volume covers plywood; veneering; durability of glues; blood albumin; casein glue; vegetable protein derivatives, phenol-formaldehyde, urea-formaldehyde, polyvinyl and polyurethane adhesives; synthetic resin glue extenders; protection against fungal decay; preservatives; casehardening; boats and ships, aircraft; and ageing, soaking and mycological tests of wetting and drying. Accompanying diagrams and tables giving numerical data on the moisture content of wood in various applications, specifications for manufacturing procedures and final products made of wood and the results of various tests add to the usefulness of this work.

school architects: regardless of how much more you might spend, you cannot buy a more practical or a more dependable **school sound system** than a ***Bogen***

A system for every budget, functionally designed according to the recommendations of the U. S. Office of Education, and built by the country's largest manufacturer of sound systems.

David Bogen Co., Inc.
29 Ninth Ave., N.Y.14.

see catalog $\frac{31a}{Bo}$ in Sweet's File

Fairhurst Unitfold folding walls...

T.M. Reg.

offer these outstanding advantages over other types of movable closures—

NO MECHANICAL POWER REQUIRED . . .
Any size Unitfold Wall may be operated manually in less time and with greater precision than most other types with or without mechanical power.

FOLDS IN MINIMUM SPACE . . .
Units may be stacked inconspicuously with or without the use of a concealing pocket.

ENTIRELY FLOOR SUPPORTED . . .
Fairhurst Unitfold eliminates need for overhead reinforcement; automatically adjusts to misalignment of floor caused by settling of building.

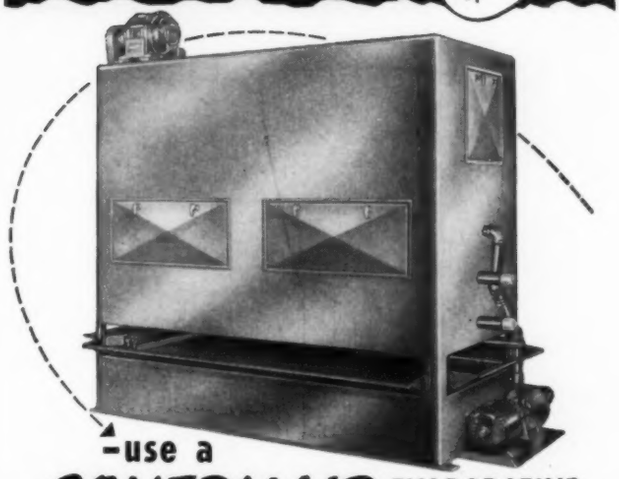
HIGHEST SOUND RESISTANCE . . .
Separate units join securely to form a solid, rigid wall; provides greater sound retardance than any other type.

MORE FLEXIBLE IN USES AND LAYOUTS
Pass door may be provided in any unit; specialized finishes available as desired. Designed to insure square corners for all right-angle partitions.

Write for details

John T. Fairhurst Co., Inc.
45 West 45th Street New York 36, N. Y.

When water is a Headache...



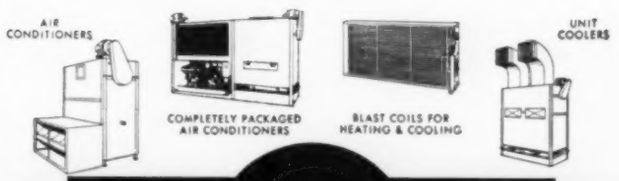
-use a **GOVERNAIR** EVAPORATIVE CONDENSER

Water supply for air conditioning *can* cause you a lot of trouble. When there's a shortage; when rates are expensive or when sewage and piping are impractical—*water becomes a real headache!*

That's when engineers and contractors alike turn to Governair Evaporative Condensers!

Governair Evaporative Condensers eliminate waste-water disposal problems and pumping costs. And they're engineered to give maximum efficiency and performance at a reasonable cost. Available in sizes from 3 to 100 tons.

Choose a Governair Evaporative Condenser and there's no need for aspirin! GOVERNAIR CORPORATION, 513 N. BLACKWELDER, OKLAHOMA CITY, OKLA.



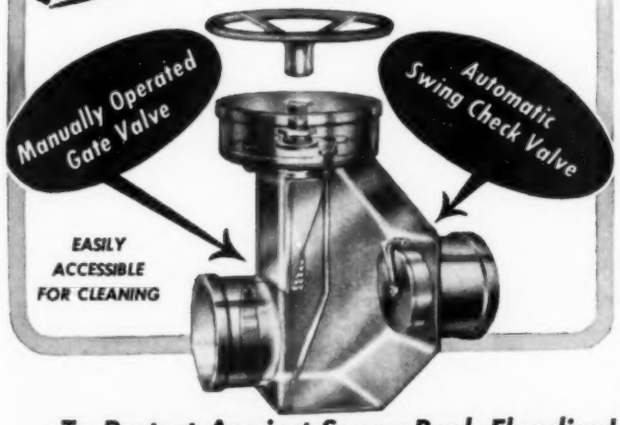
GOVERNAIR

ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS

Boosey MODEL 109

DUAL DRAINAGE CONTROL VALVE

HAS BOTH . . .



. . . To Protect Against Sewer Back Flooding!

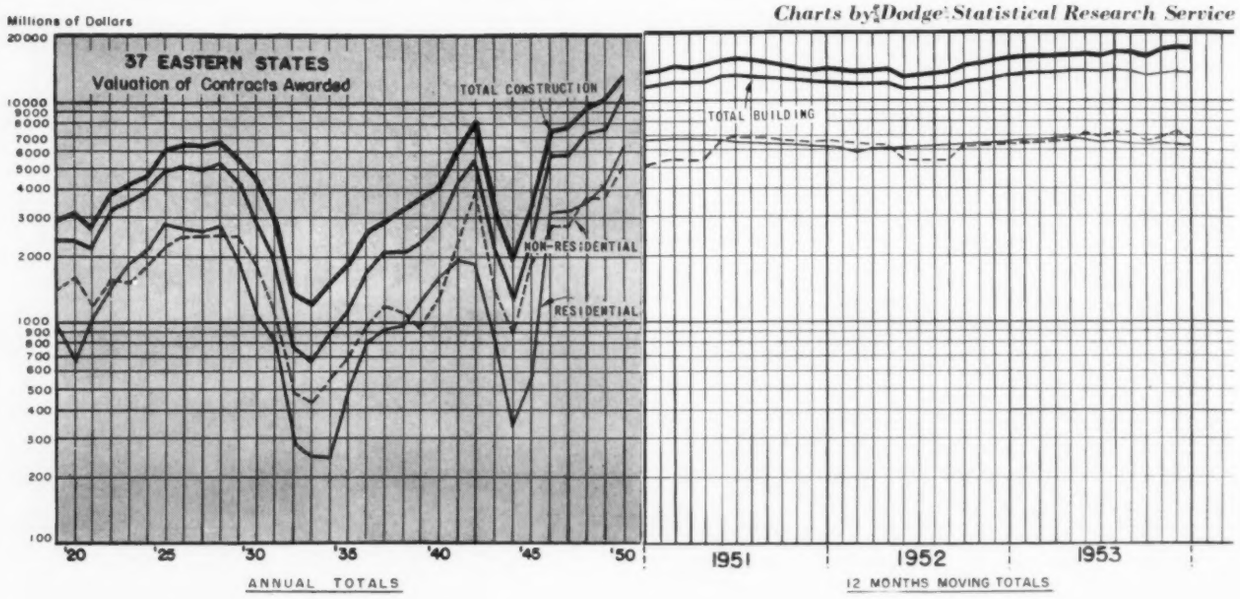
Properly installed according to local building codes, the Boosey Model 109 will provide dependable protection for stored merchandise and valuables. Basement flood conditions due to back pressure flooding from the street sewer can now be controlled either manually or automatically with the Boosey Model 109.

SEND FOR SPECIAL LITERATURE ON BASEMENT FLOOD PROTECTION

NORMAN BOOSEY MFG. CO.
General Sales Office
5281 AVERY AVENUE DETROIT 8, MICHIGAN

CURRENT TRENDS IN CONSTRUCTION

Charts by F. W. Dodge Statistical Research Service



HIGH LEVELS CONTINUED

Contract awards reported by F. W. Dodge Corporation continued at high levels to the end of 1953. The year ended with a construction volume for the 37 Eastern states covered by Dodge Reports totaling $17,443,463,000 — an increase of 4 per cent over 1952.

Residential building for 1953 totaled $6,479,143,000, a decline of 3 per cent. The decline was largely in apartment work, however, and single family totals were slightly above those established in 1952.

Non-residential building for the year totaled $6,955,866,000 — an increase of 4 per cent over 1952.

Although most categories of work were at record or near-record levels, there was some variation as follows:

Commercial building increased sharply, with a total of $1,489,398,000 as compared with $979,235,000 in 1952.

Manufacturing building totaled $2,051,390,000 compared with $2,558,134,000 in 1952.

Educational and science building showed an increase from $1,471,612,000 in 1952 to $1,719,997,000 in 1953.

Hospital work totaled $433,634,000 — off slightly from 1952.

Religious building was up sharply over 1952 — an increase from $317,480,000 to $384,706,000.

Social and recreational building continued its gains, the totals being $153,403,000 in 1952 and $221,765,000 in 1953.

EDUCATIONAL & SCIENCE BUILDING 1947–1953

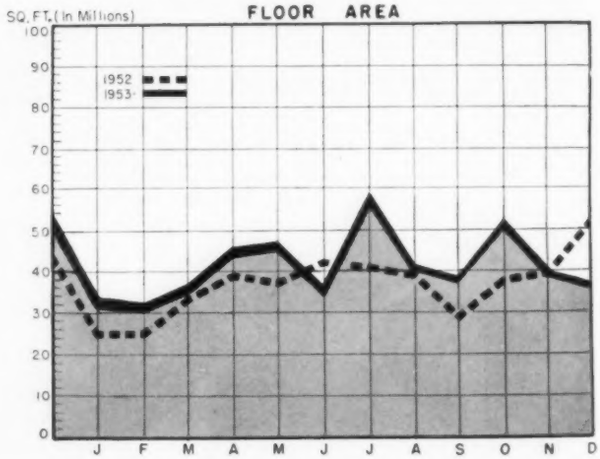
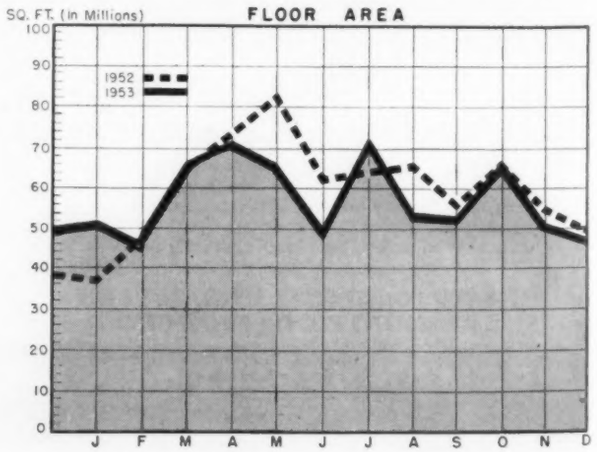
F. W. Dodge Contracts Awarded—Millions of Dollars (37 Eastern States)

Year	Annual Total	Monthly Average	Year	Annual Total	Monthly Average
1946	221	18	1950	1179	98
1947	392	33	1951	1335	111
1948	724	60	1952	1472	123
1949	824	69	1953	1720	143

Monthly Totals

1952				1953			
Jan.	98	July	122	Jan.	106	July	176
Feb.	104	Aug.	145	Feb.	102	Aug.	145
Mar.	119	Sept.	87	Mar.	124	Sept.	138
Apr.	134	Oct.	126	Apr.	147	Oct.	152
May	146	Nov.	116	May	163	Nov.	140
June	127	Dec.	145	June	148	Dec.	176

NONRESIDENTIAL BUILDING (37 EASTERN STATES)



RESIDENTIAL BUILDING (37 EASTERN STATES)